# SANITARY CHEMICALS

They look alike

but ...

One may be destined for a successful—the other for a mediocre—career. Two cakes of soap that look, feel and lather exactly alike may experience the same analogy. Often the difference lies in perfuming. Our skillful soap-perfumers, aided by the ceaseless experiments of the scientists in our Research Department, have made soap perfuming a fine art. The "originals" we have now deserve your attention.



van AMERINGEN-HAEBLER inc . 315 Fourth Avenue, New York 10, N. Y.

# Soap Needs Alkalies





CAUSTIC SODA

POTASSIUM CAR-BONATE

SOLVAY SALES CORPORATION Alkalies and Chemical Products Manufactured by The Solvay Process Company

# NEW!... Self-Polishing. ROXAX

...a different and better formula

- Very Light Color
- Will Not Jell or Solidify
- Transparent ... Won't Darken Floors
- · High Lustre without Buffing
- Non-Alkaline
- Contains no Resins, Shellac or Gums
- Slip Resistant
- High Abrasion Resistance
- Completely Water Resistant
- Tack Free in 20 Minutes
- Easily Removed with Cleanser or Strong Soap
- Good Odor. Does Not Contain Ammonia
- No Sediment on Storage
- Available in Three Grades:
   Super Heavy Duty Standard

OT just another wax... but a new and different formula... perfected after long research in the Fuld Laboratories... offered to you after thorough test in the field... ROX. Solids contain no resins, no shellac, no gums of any kind! Extremely stable... will not solidify or jell even if stored for long periods. Imparts a long-wearing, highly polished surface without buffing. Try it... see that ROX is different... is better!

Fuld

Brothers

702 South Wolfe Street, Baltimore 31, Md. 2444 East 8th Street, Los Angeles 21, Cal. New York Sales Office: 55 West 42nd Street

Liquid Soeps, Floor Seels, Floor Treatments, Deodorant Blocks, Liquid Deedorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Olf Soeps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes Furniture Polishes, Deodorant Block Holders, Seep Dispensers.



#### How NOT to do it

Don't gamble on customer appeal. It is of foremost importance. Launching a new product calls for special emphasis on what will appeal at the time of sale and use. If you gamble . . . you may lose.

The first and most important requirement is a properly fixed, fairly priced and full strength perfume raw material.

The resources of one of the manufacturers in the world who have never compromised with quality assure you of the finest perfume raw materials it is possible to produce.

We particularly call your attention to the following:

VERATRALDEHYDE

PARA METHYL HYDRATROPIC ALDEHYDE

FLORANOL — A Single Chemical Used in Compounding Rose Odors
ALDEHYDE PHENYL ACETALDEHYDE DIMETHYL ACETAL
HYDRATROPIC ALDEHYDE
CYCLAMAL INDOL

Also a full line of Aromatic Chemicals used for Perfumes-Soaps-Cosmetics Requests for samples on your firm's letterhood and further information will be promptly furnished.



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# SOUZALE SANITARY CHEMICALS

Mog. U. S. Pas. U

#### APRIL 1945

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# For White soaps that are WHITE, use .... COUMARIN MONSANTO

Coumarin Monsanto, widely favored by soapmakers and perfume manufacturers for the creation of popular bouquets, is so pure that it is used even in the *whitest* soaps.

The uniform quality of Coumarin Monsanto, one of the purest chemicals known, makes it easy to use. Like amounts always give like results. It is economical, too. Because it is readily soluble, Coumarin Monsanto can be blended into your products quickly and evenly.

Monsanto was the first manufacturer in America to produce coumarin. Production began after years of careful research and continues under strict laboratory control. Such careful practices actually begin with the materials from which Monsanto Coumarin is made, for most of them also are Monsanto products.

If you wish samples of Coumarin Monsanto... and technical information... we shall be pleased to send them. You may contact the nearest Monsanto office or use the convenient coupon. Monsanto Chemical Company, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.

PLAVORING MATERIALS—
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Please send free data and sample of Coumarin Monsanto.

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THE BEAUTY of this display package helps sell Luxor's The BEAUTY of this display passage and Gardenia Dusting Powder. That's because fortythree million women, who look at packaged products daily-whether selecting kitchenware, confections or cosmetics-habitually choose "the best looking" products and packages. Look at your package. How does IT rank with packages of competing products-in selfselling attractiveness?

#### WAY TO A BETTER PACKAGE

The Ritchie way integrates art and artisanship—to give you a better package at a low unit cost. A package that quickly, unmistakably identifies, fully protects and conveniently dispenses your product. A practical, production-planned package—easy to fill or pack, easy to handle, stack and display-but above all designed for eye-appeal, for quality-impression, for beauty that sells!

#### THE 5 ESSENTIALS OF A SELLING PACKAGE

easy to fill or pack.

2 It must fully protect

3 It must be easy to

1 It must be practical, and conveniently dis-production-planned, eco-pense the product.

1 It must be easy to

2 It must be easy to

5 It must be good looking. memorable, ATTRACTIVE!

and COMPANY W. C 8881 Baltimore Avenue, Chicago 17

PAPER BOXES . FIBRE CANS . TRANSPARENT PACKAGES

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ST. LOUIS

MINNEAPOLIS



This new low-priced aromatic (formerly known as Savonella) combines odor freshness with effective strength. As little as 1% gives a very definite, pleasing and refreshing odor to soap chips, soap powders, mechanic's hand soaps, cleansers and other soap products.

Citrella, at the present time, is available in large quantities. We'll be glad to send you samples for your own experiments. Write us today!

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For the 27th consecutive month has topped all previous sales records

> VICTORY DISINFECTANT is not a substitute, but a big improvement over pine oil . . . which explains its phenomenal popularity with hospitals, industrials, and restaurants from coast to coast.



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VICTORY DISINFECTANT forms a good white emulsion. Its extra efficiency and gentle yet longer lasting fragrance offer extra value for the same phenol coefficient.

Send for Sample and Prices



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HOSPITALS

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Plant and Laboratories: Bayonne, N. J.

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# Red Oil

#### from HARDESTY

Performance is the word for HARDESTY Red Oil. Because of HARDESTY'S emphasis on quality, manufacturers can rely with confidence on this oleic acid.

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HARDESTY also makes sure that its organization delivers the goods, too. A good product accompanied by poor service is of little value to a busy industry. Therefore, to complete its picture of quality, HARDESTY maintains outstanding service along with top-ranking products.

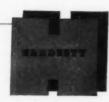
Yes, HARDESTY is headquarters for Red Oil. Write for a sample today—or for any of these other HARDESTY products that will give real performance in your process:

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WHITE OLEINE

RED OIL
HYDROGENATED FATTY ACIDS

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WITH RESOURCES BY Sivaudan

Behind the advanced service in odors, perfume bases and aromatics that Givaudan gives to the perfume and cosmetic industry, lies intimate knowledge of thousands of working materials. The broad scope of Givaudan's acquaintance with organic chemicals and perfume components of every description and for every compounding purpose, is in fact, one of the outstanding advantages enjoyed by Givaudan customers. For this knowledge is constantly proving useful in the development of special odor effects and adaptations of perfume and cosmetic products to special demands and conditions of use.

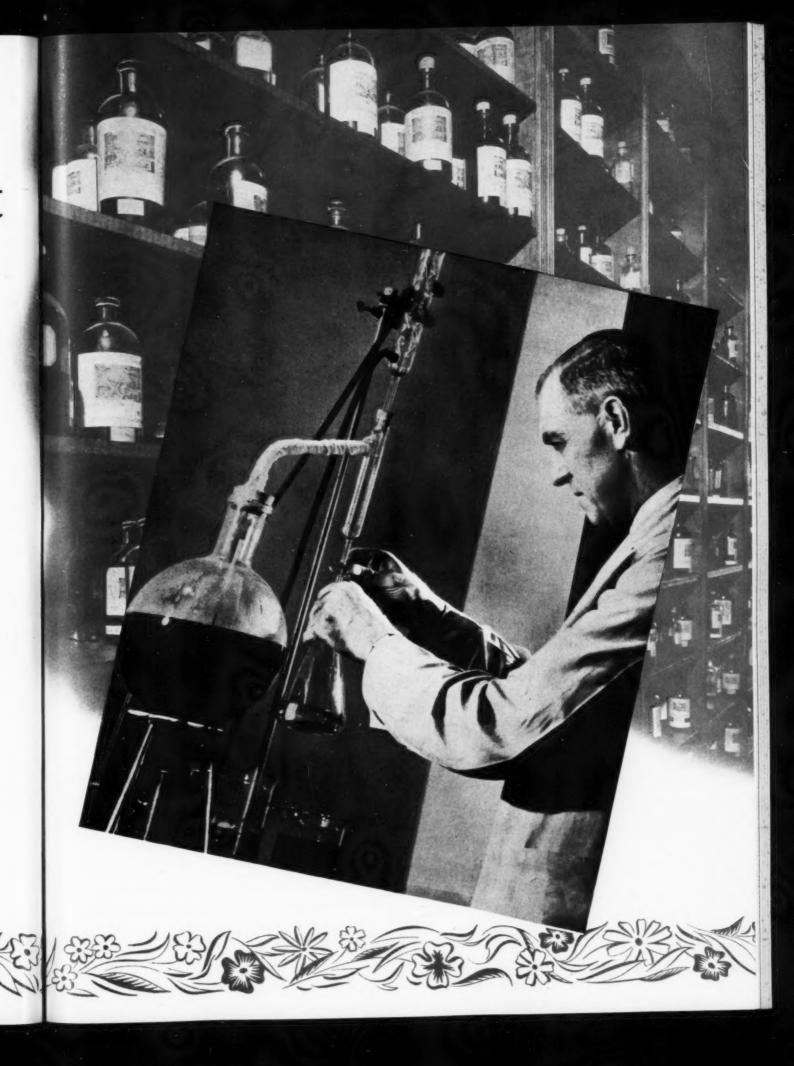
You are invited to submit your aromatic problems to Givaudan... to learn the quality of Givaudan products... and let Givaudan resources and skill improve the quality and broaden the range of your products' appeal.

"BUY WISELY...BUY GIVAUDAN"

Givandan-Delawanna INC.

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# CHEMICAL HEADQUARTERS

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ALKALIES

CAUSTIC POTASH Liquid

CAUSTIC SODA Liquid . Solid . Flake

PHOSPHATES

TETRA SODIUM PYROPHOSPHATE-Crystals Westvaco is the only producer of TSPP Crystals. Rapidly soluble. Give Westvaco is the only producer of ISPF Crystals. Rapidly soluble. Give your mixtures "eye appeal". (We also solicit inquiries on TSPP Anhydrous-Granular or Powdered.)

SODIUM TRIPOLYPHOSPHATE -An old text book chemical, now available in commercial quantities An old text book chemical, now available in commercial quantities at an attractive price for mixtures. High in Calcium sequestering at an attractive price for mixtures. Fign in Calcium sequestering value, makes suds more stable, helps prevent scum. Samples and quotation on request.

A new chlorinated sodium phosphate for disinfectant-detergent mixtures. Approximately one tablespoonful of Fosklor added to one mixtures. Approximately one tablespoontul of rosklor added to one gallon of water provides 100 ppm. of available Chlorine. FOSKLOR\* gation of water provides 100 ppm. of available Chiorine. Also attractively priced for mixtures. Send for details and samples.

DI-SODIUM PHOSPHATES and TRI-SODIUM PHOSPHATE

\*T. M. REG. U. S. PAT. OFF.

FOR FUMIGATORS—Westvaco is a new source of Methyl Bromide. Write for details.

FOR JANITOR SUPPLY HOUSES: Carbon Tetrachloride, subject to WPB allocation.

We solicit inquiries. WIRE, WRITE OR PHONE.

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405 LEXINGTON AVENUE . NEW YORK 17. N. Y. CHICAGO. ILL. GREENVILLE. S. C. NEWARK. CALIF. Is your product lifeless?





THE ROUNDING, full blending, and fixative values of Du Pont Astrotone\* BR will give new life to your product. Astrotone BR is versatile... wholly soluble in and compatible with all perfume materials. It brings exquisite harmony to fine perfumes, softens harsh edges and gives subtlety in lower priced bouquets.

\*A true synthetic, product of Du Pont research, Astrotone BR belongs to the family of compounds of which musk tonquin is a member. If should not be confused with the chemically different nitro musks.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. J. DU PONT DE NEMOURS & CO. (INC.)

Organic Chemicals Department, Aromatics Section, Wilmington 98, Del.

Branch Offices: Boston, Charlotte, Chicago, NewYork, Philadelphia, Providence, San Francisco.

Say you saw it in SOAP!

#### Quality Still has Highest Priority at Hooker

Soapmakers who are using some of their facilities for war work know how great is the demand for chemicals for war material, and understand why they may not always be able to get all the chemicals they need for their soapmaking. But of one thing they can be sure—that which they get from us is the same uniform high quality which has made Hooker a favored source of supply for

caustic soda and other soaps and sanitary chemicals for many years,

Listed below are some of the Hooker chemicals whose uniform high quality has helped to lighten the burdens of manufacturers of soap and sanitary chemicals. If there are any about which you want more information, the Hooker technical staff will be glad to help you.



#### Product

Chemical Formula Molecular Weight

Benzoate of Soda—USP CoHaCOONa: 144.0

Benzoic Acid CoHoCOOH; 192.1

Benzoyl Chloride (Benzenecarbonyl Chloride) CoHsCOCl; 140.5

Cyclohexanol (Hexahydro Phenol) CeH11OH; 100.1

Methyl Benzoate (Niobe Oil) CaHaCOOCHs: 136.1

Methyl Cyclohexanol (Hexahydro Cresol) CH3C6H10OH; 114.1

Orthodichlorbenzene (1:2 Dichlorbenzene) CoH4Ck; 147

#### Description

All Specific Gravities at 15.5°/15.5°C.

White, odorless, crystalline solid.

White, crystalline material.

Water clear liquid soluble in ether; reacts with alcohol and water. Sp. Gr. 1.219±,003. Boiling Point 198°C. Freezing Point, Min. −0.9°C.

Clear, colorless liquid with pleasant aromatic odor. Sp. Gr. 0.96%. Boiling Range: High Grade, 158° to 160°C, Tech. Grade, 155° to 165°C.

Clear, colorless liquid with odor resembling oil of wintergreen. Sp. Gr. 1.0930. Boiling Range 4°C Max. including 199°C.

Slightly viscous straw colored, neutral liquid which becomes glasslike when cooled below room temperatures. A mixture of ortho-, meta-, and para- isomers. Sp. Gr. 0.924±.003.
Boiling Range 155 to 180°C.

Clear, colorless liquid. Sp. Gr. 1.310±.005. Boiling range 10°C Max. including 180°C.

#### Suggested Uses

Antiseptic in pharmaceutical and medicinal preparations, in tooth pastes and powders.

Ingredient of cosmetic creams, lotions and other pharmaceutical preparations; antiseptics, dentifrices, dyestuff intermediates. Manufacture perfumes and pharmaceuticals.

Highly active source of benzoyl group. Manufacture of benzophenone, benzyl benzoates, synthetic perfumes, dyes and pharmaceuticals.

In manufacture of disinfectants, germicides and insecticides, perfumes in soaps, solvent.

Deodorizing material for soaps and in manufacture of perfumes.

Perfume in soaps and to incorporate solvents and phenolic insecticides; solvent.

Insecticide, solvent for natural and synthetic gums, resins, tars, grease, oil, fats. Ingredient of metal polishes, paint and varnish removers. Insecticide for: termites, powderpost beetles, flies, bed bugs, roaches, wood borers, midges, barnacles, etc. Manufacture of pyrocatechin, dye intermediates, synthetic organics.

Hooker General Products List gives packaging information on these products and also brief descriptions and data on the other Hooker chemicals. Send for a copy.

#### HOOKER ELECTROCHEMICAL COMPANY

Buffalo Avenue and Union Street, Niagara Falls, N. Y.

NEW YORK, N. Y. . TACOMA, WASH. . WILMINGTON, CALIF.

BLEACHING POWDER

CAUSTIC SODA

FERRIC CHLORIDE

PARADICHLORBENZENE

MURIATIC ACID

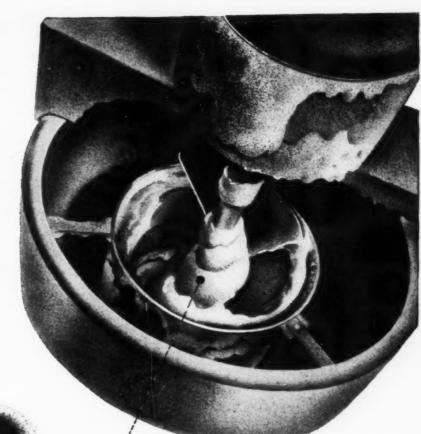
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5266

Say you saw it in SOAP!

16

April, 1945



from the

better soap products



#### Here are 4 reasons why

- 1. Faster Saponification! With Neo-Fats saponification is at least twice as fast as with neutral fats, thus enabling your present kettles to turn out double your present volume of soap in the same length of time.
- 2. Greater Yield! You will get a consistently higher yield of anhydrous soap per pound of fat base using Neo-Fats than with whole fats.
- 3. Better Quality Soap! Neo-Fats give you a better finished, more neutral soap because saponification is complete and there is less possibility of turbidity. What's more, Neo-Fats' uniform high quality is assured by Armour's rigid chemical control of every production step.
- 4. Economical! As Neo-Fats double your production capacity-your equipment cost, labor and other overhead costs remain almost constant. And there is no waste when Neo-Fats are on the job because they are 100% usable.

#### ARMOUR CHEMICAL DIVISION

**Armour and Company** 

1355 WEST 31st STREET, CHICAGO 9, ILLINOIS

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- \* Insecticides
- \* Germicides
- \* Cleaners
- \* Detergents

The Dairy Industries are one of the nation's largest users of insecticides, germicides, cleaners, and detergents.

Here is a tremendous national market where clean sterile equipment is as important as fresh pure milk and where cleaning is virtually a continuous process.

You can reach and sell this market effectively and at low cost through

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Write for details and sales data about building lasting and profitable repeat volume for your products among the thousands of ice cream plants, milk dealers, creameries, condenseries, and cheese factories of America.

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Milwaukee 12, Wis.





MILK









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perhaps we should have told you more about thetic-organic detergent. NACCONOL long ago. But these past three years We've been mighty busy trying to keep NACCONOL production abreast of the mounting demands of Army, Navy and essential civilian customers. Formula development work done now will facilitate our ability to serve you sooner and better as

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Antoine Chiris was established in France in 1768 and all through these years pioneered in the development of its long-known worldwide organizations. The American branch was established in New York in 1899.

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PERFUME BASES
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for

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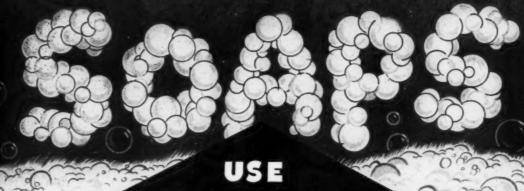
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"Give generously of your capabilities, and you will receive with equal generosity."—Percy Cecil Magnus.

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#### ESSENTIAL OILS

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# Synthetic Organic Chemicals

#### OF INTEREST TO THE DRUG AND COSMETIC INDUSTRIES



### Powerful Wetting Agents for "Soapless Soaps" and Shampoos.

Tergitol penetrants are highly effective even when used with acids, alkalies, and hard water and display exceptional wetting, penetrating, and emulsifying action. They profoundly influence the surface activity of water solutions, even under conditions of high dilution. These higher alcohol sulfates also markedly enhance the bactericidal properties of most antiseptics.



### Emulsifying Agents for Creams, Lotions, and Soaps.

Stable emulsions, almost neutral in reaction and resistant to freezing, can be prepared using Triethanolamine. The soaps of this compound, having a pH of about 8, are free from irritating action on the skin and will not injure fabrics. Many other amines—for example, monoethanolamine, diethanolamine, morpholine, diethylethanolamine, and the isopropanolamines—are also used in many emulsifying applications.



#### Intermediates for Synthesis of Antiseptics, Perfumes, and Drugs.

Many highly reactive chemicals such as pentanedione (acetyl acetone), allyl alcohol, acetoacetic esters, ethylene amines, and acetic anhydride are raw materials in the preparation of a wide variety of pharmaceuticals and cosmetics.

### Water-Soluble Bases for Ointments and Cosmetic Creams.

Carbowax compounds are chemically stable solids ranging in consistency from that of petrolatum to paraffin wax. The softening point of these water-soluble solids may be varied by blending with liquids such as the polyethylene glycols. When used in cosmetic creams, leg make-up, suntan creams, and hand lotions, Carbowax compounds impart superior softening, conditioning, and skin-smoothing qualities to these preparations. The water solubility of these compounds insures effective use of the active ingredients, controlled hygroscopicity, and ease of removal.



More than 160 synthetic chemicals are produced by Carbide and Carbon Chemicals Corporation. Of these, many are being used for a wide variety of applications in pharmaceutical preparations. A few of these uses are mentioned above and a partial listing of our products of interest to the drug and cosmetic industries is given below. For further information on any of these chemicals or their uses, write to us.

Allyl Alcohol	Acetone	Triethanolamine
Methanol	Pentanedione-2,4	Mercaptoethanol
Ethanol	Glyoxal	Mercaptoethanoi
"Synasol" Solvent		"Tergitol" Penetrants
Isopropanol	Acetic Anhydride	"Carbowax" Compounds
Trimethylcyclohexanol	Ethylene Amines	•
Ethyl Ether	Morpholine	"Cellosize" Hydroxy-
	Monoethanolamine	ethyl Cellulose WS
Ethyl Acetate	Diethanolamine	Polyethylene Glycols
Isopropyl Acetate	Methyldiethanolamine	and 135 other synthetic organic chemicals
Acetoacetic Esters	Triisopropanolamine	

The words "Carbowax," "Tergitol," "Synasol," and "Cellosize" are registered trade-marks of Carbode and Carbon Chemicals Corporation.

Distribution and use of these materials as components of pharmaceutical products are subject to the provisions of the Federal Food, Drug and Cosmetic Act and Regulations.



#### CARBIDE AND CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

NEC

30 East 42nd Street, New York 17, N. Y.

Here's the disinfectant you've wanted a long, long, time!!

# Winter-phene

#### A foot-bath that both your feet and nose can enjoy

So help us! You don't know how good a foot-bath can be until you have used WINTER-PHENE. A few ounces mixed with a few gallons of water and used in the foot-bath tray is the ideal method to Athletes Foot Discuse.

WINTER-PHENE should be used in every locker room, gymnasium, club, hospital, institution or any place where it is necessary for people to contact the same floor with bare feet. The toxic agent in WINTER-PHENE destroys hacteria that cause obnorious ofors and the pleasant odor of winter-green completely deadorizes the atmosphere, leaving it clean and fresh and heaven at that way.

Delightful odor (winter-green)
Ideal athlete's-foot solution
Powerful germicide
Excellent entiseptic
Crystal-clear green concentrate
Milky solutions in water

# Winter-phene

### It's delightful!!!

We mean it. As a general rule when one thinks of a "disinfectant" it calls to mind evil, pungent odors, reminiscent of hospitals, operating rooms or we might even go so far as to mention low-grade boarding houses or delousing stations, etc. You know what we mean, people somehow just don't think of disinfectants in a favorable light—particularly from an odor viewpoint.

## ... and delicious!!!

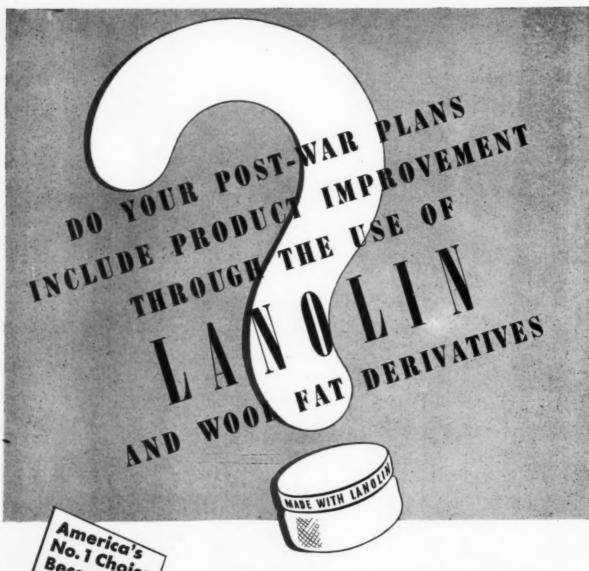
No, it doesn't taste delicious, but man! what a delicious odor. WINTER-PHENE is an ideal product to package in glass containers because of its brilliant, sparkling, crystal green color. It's seldom you hear of a germicide having "eye appeal," but here's one that appeals to both the sense of sight and sense of smell.

When WINTER-PHENE is mixed with water a snow white emulsion is formed which does not separate on standing. The solution does not deteriorate or lose strength with age and continuously gives off (here we go again!) a delicious, fragrant scent of wintergreen.

A SAMPLE IS WAITING - WRITE

Baird & McGuire, Inc.

Holbrook, Mass. Saint Louis, Missouri



TRUE, Lanolin is on allocation today...but there are no restrictions on experimentation with Lanolin.

Your chemists are free to dabble to their heart's content with samples that we'll be glad to supply. And there's no charge either for the Lanolin know-how which has made Malmstrom "America's Largest Supplier of Lanolin and other grades of Wool Fat."

To get the jump on tomorrow, start experimenting today with Malmstrom's NIMCO BRAND Lanolin.

### N. I. MALMSTROM & CO.

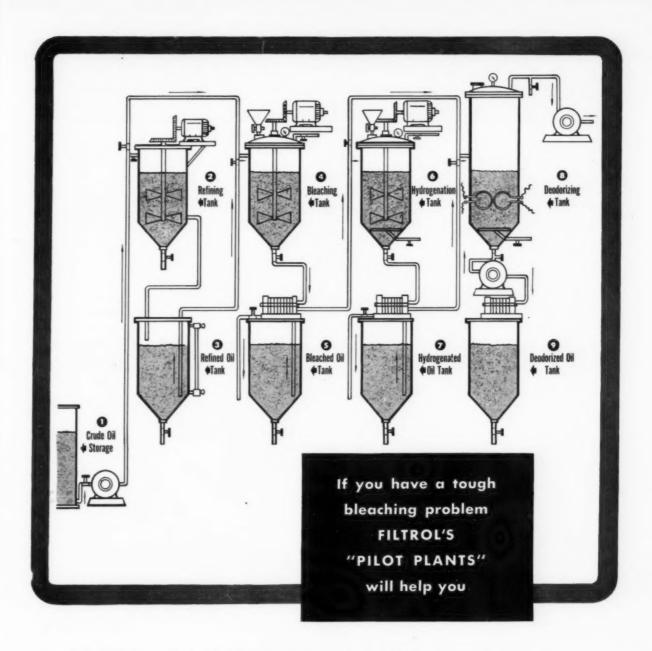
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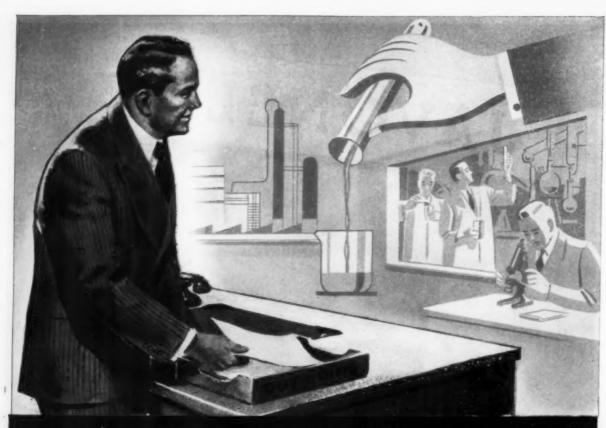
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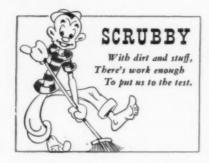
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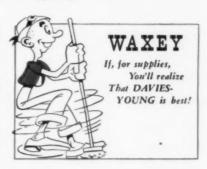
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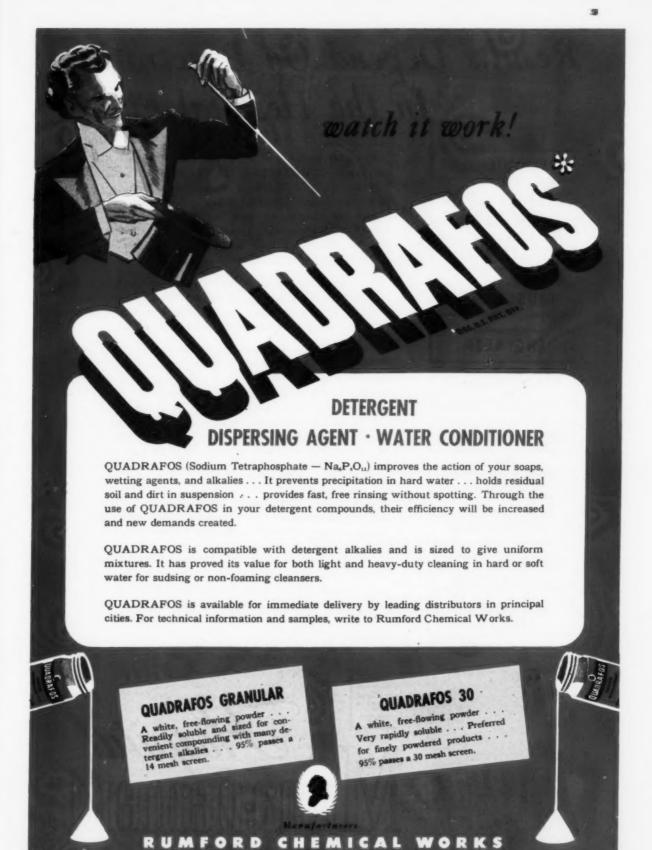
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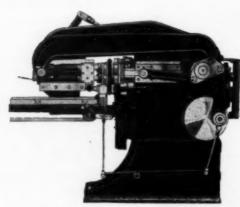
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## AS THE SEES IT

OR the second quarter of 1945, soapers will be permitted to operate on a basis of 80 per cent fat and oil quotas based on 1940-41 averages, according to an amendment to WFO-42b. Although this is five per cent under the quota figure covering household soaps for the first quarter of this year, it will approximate the actual fat use rate of the past two months inasmuch as the reduction of late January was made retroactive to January first. In short, fat quota consumption at the soap kettle for the April-June period will be about the same as that of February and March.

In addition to cutting fat quotas, WFO-42b restricts soap inventories for industrial users to a 45-day supply. The object of this restriction is obviously to ward off heavy buying for inventory by large industrial soap consumers in anticipation of tightening soap supplies later this year. Industrial soap inventories are again placed under restrictions similar to WFO-86 which developed out of the soap shortage of 1943 and which were abandoned in August, 1944.

Although fat quotas and soap inventory restrictions are again just about where they were two years ago when an acute shortage of soap,-not to mention rationing,-was anticipated, the current situation is still in the raw material stage. In most markets, soap supplies have not yet reached a degree of acute shortage. However, the firm belief that this will develop within a few months is not held alone by WFA. The over-all situation indicates that an acute soap shortage cannot be avoided. The conditions which saved the day in the 1943 shortage do not apply at the present time. From the soap angle, the raw material outlook and the European situation were not as dark two years ago as they are today. Before the present year is out, further cuts in civilian soap fat quotas may be forced upon WFA. It is quite generally admitted, considering all factors involved, that American soapers cannot fill anticipated government needs for soap and continue to operate even at an 80 per cent civilian quota figure.



EW brands of everything from cigarettes to soap which have come to market of late appear to be numberless. Obviously, many of them are designed to circumvent OPA price ceiling regulations. In cases where price ceilings represent an actual hardship upon the manufacturer and where relief is slow to arrive, such circumvention may have some small moral justification. However, where these new brands suddenly appear from nowhere, they are often embarrassing, not to mention unfair to brands already established in any local market.

We hear of cases where new brands of soaps of inferior quality are being offered at sharply higher prices in some areas in competition with established brands. Obviously, this is a violation of OPA regulations,—and eventually OPA will get around to prosecuting the violators. In the meantime, however, the local manufacturer who stays within the price law does not feel too good about the whole thing. He believes that OPA is far too slow in clamping down on his competitor, and even slower in giving him relief from too low prices. And he feels that local OPA authorities are not on their toes in detecting these violations promptly.

Knowing that there must be thousands of these cases of undetected price violation, we can appreciate the magnitude of the problem faced by OPA. But that does not help the numerous small soapers who have been in a "price squeeze" for the better part of the past two years. In fact this type of violation is in our opinion partly an outgrowth of the slowness of OPA in handling relief applications and the detailed substantiation of costs which they require in such applications.

8

MENDMENTS to MPR-391 by OPA bring to mind again the complicated character of this and other price regulations,—and particularly the lack of understanding of them among the rank and file of soap manufacturers. Recently, we have examined MPR-393 in some detail. This regulation covering prices for shampoos, cosmetics, and the like is truly a masterpiece of complicated verbiage which has thus far been amended five times and which with its amendments covers about 15 pages of very small type. Obviously, those who do business under this regulation should understand it thoroughly. But the fact remains that many do not. To accounting and legal staffs of the larger companies, MPR-393 and its amendments are probably quite clear, but this is of no help to the smaller operator.

As far as we can determine, most of the smaller firms are struggling along as best they can to keep within the law, but are more often than not in doubt as to their positions. To be perfectly sure that their every act is correct and legal, they maintain, would require a lawyer to pass on each sale and price. In the light of the hundred and one regulations in addition to MPR-393 which weigh so heavily on the average small manufacturer, this one at least might be rewritten and materially shortened and simplified by incorporating the five amendments into a new regulation. In fact, after any regulation or order, be it OPA, WPB or other, has been amended four of five times,

it should be completely rewritten and a wholly new regulation issued. Such might to some degree aid a little in decomplicating some of these highly involved documents.



ROSPECTS are not good for an early resumption of importation of any large volume of French essential oils and other perfuming materials, to judge from reports reaching the United States. For one thing, the French were considerably surprised to be liberated so rapidly, and they are completely unprepared with any substantial stock of oils for shipment. The essential oil producing industry did not suffer directly from military operations, but the many shortages, - solvents, fertilizer, trucks, labor, tin, machinery, drums, even bottles—have left them almost incapable of operating until new stocks of these essentials are provided.

Strenuous efforts are reported being made by French producers of essential oils to get necessary materials and equipment in hand before the new spring flower crops are ready,—crops, by the way, which are far below pre-war levels. Unless these materials and the necessary labor are obtainable, another lean year can be anticipated in essen-

tial oil production.

Experience of the past few years by American soapers and other large users of perfuming materials is likely to have considerable effect on essential oil production of the future, not only in France but elsewhere. Having learned to make more effective use of synthetics and perfume specialties as a result of war-time scarcities, former large consumers of essential oils are not expected to turn back to them until they are more freely available and competitively priced. This may not be for several years to come,-and even then, there are many who may continue to depend on those substitutes which have proved so satisfactory during the war.

## LANOLIN SOAPS...

The practical value of lanolin in superfatting as gleaned from research in dermatology and in toilet soap formulation

By Milton A. Lesser



HE idea of superfatting soap originated about six decades ago. In 1885, the famous European dermatologist, Unna (1) suggested that the occasional

irritating effects of soap on the skin could be ameliorated by using more fat than was required to neutralize the alkali employed in its production. Superfatting, it was reasoned, would eliminate the possibility of free alkali remaining in the finished soap and might perhaps combine with the alkali formed by hydrolysis when the soap was dissolved in water. Today, with soap manufacture at a much higher stage of perfection, superfatting is not considered necessary for the purpose of neutralizing excess alkali, but the practice of adding fatty materials continues because of the benefits and advantages resulting from such procedures.

In the older methods, soapers achieved their purpose merely by adding to the kettle a quantity of fat and oil in excess of that required to neutralize the alkali required for saponification. In the more modern and generally used procedures, the superfatting agent is incorporated in the soap base in the mill, the crutcher, or in a mixer (2). Quite a substantial number of materials may be employed as superfatting agents, but of these substances, lanolin or wool fat stands out as one of the most popular and effective. Authorities in the field rate lanolin very high. Augustin (3), for example, considers lanolin the best adapted material for superfatting toilet soaps. Classing lanolin as one of the best superfatting substances, Glenn (4) regards it as almost the ideal superfatting material.

Although the ancients used crude wool fat or suint for various purposes (5), lanolin as we know it did not come into being until about 1882, when Braun and Liebreich undertook the preparation of a pure neutral wool grease from the crude product (6). Improved methods of treatment have resulted in the high grades of lanolin now available for therapeutic, cosmetic and superfatting requirements, as well as numerous other industrial needs.

For many years, lanolin has been officially recognized in the pharmacopoeias of the world. The "United States Pharmacopoeia," for example, provides standards for both the hydrous and anhydrous forms of lanolin. Various other grades are standardized according to end-use requirements (6). From time to time, workers in various fields have proposed specific requirements for lanolin. De Navarre (7, 8), for example, in discussing the type of lanolin suitable for cosmetic purposes, states that a product is acceptable if it complies with the U.S.P. requirements; is free from impurities; and shows 1 per cent free cholesterol, with

a combined cholesterol of 13 per cent and a total cholesterol of 14 per cent.

Despite its greasy feel and the fact that it is often referred to as "wool fat," lanolin is not a fat in the chemical sense of the term because it does not contain glycerides. Although softer than most materials included in this category, lanolin is more properly classified as a wax since its fatty acids are esterified by higher alcohols (9). However, it differs from ordinary waxes in that it contains some lower alcohols and fatty acids. The alcohols, such as cholesterin, isocholesterin, oxycholesterin, metacholesterin, lanolin alcohol, and others, form esters with the acids. The acids include stearic, palmitic and oleic acids, as well as cerotic, myristic, carnaubic and other high acids (10). More detailed consideration of individual components and factors influencing their production have been published in the technical literature (11, 12, 13).

Present as an external coating on sheep wool fibers to the extent of from 10 to 50 per cent, raw wool grease is a mixture of free fatty acids and alcohols, esters of higher fatty alcohols with higher fatty acids and a variety of impurities. By rather complicated processes, it is possible to remove all but traces of dirt, moisture and free fatty acids, leaving a purified

There is said to be a rather remarkable similarity between lanolin and human dermal fat, making it quite understandable that wool fat should be readily utilized by the human skin as a soap ingredient. Photo of sheep shearing, a preliminary to extraction of the wool fat, by Ewing Galloway.

mixture of esters and free alcohols, and giving a product which is neutral for all practical purposes, usually containing only about 0.2 per cent of free fatty acids, expressed as oleic acid. The two basic grades of lanolin, the pharmaceutical and commercial, are distinguished chiefly by their color and their fatty acid content (6).

The familiar yellow, tenacious, unctuous mass has but little odor and can be exposed to the action of air for a long time without liberating acids and becoming rancid. Lanolin is also very stable to acids and alkalies and can be partially saponified (about 60 per cent) only by prolonged action at high temperatures and under pressure. Insoluble in water, which it absorbs, lanolin is slightly soluble in cold alcohol, more so in hot alcohol, but is freely soluble in quite a number of organic solvents. It mixes readily with warm oils (9, 10).

One of the most important qualities of lanolin, a factor commented upon by many writers (3, 5, 14, 15), is the marked resemblance in both composition and function between wool fat and sebum of the human skin. As remarked by Lower (6), it is often stated that lanolin is the one commercial fatty substance which approximates the constituents of the natural oil excreted by the sebaceous glands of the skin. It is known that similar products are found in human skin.

This observation has a most important bearing on the extensive use of lanolin in many types of preparations for protecting the skin or for treating dermatologic disorders. Inasmuch as such a marked similarity exists between lanolin and human dermal fat, it is but natural that wool fat should be readily utilized by the human skin. As remarked in an item in the Journal of the American Medical Association (16), lanolin has long main-



tained its popularity as an ingredient of pharmaceutic ointments and cosmetic creams. In cosmetic form it is highly commended as an excellent emollient. When purified it is practically inodorous, blends well with many drugs and cosmetic ingredients, and does not readily become rancid. There is no proved tendency in wool fat toward the promotion of hair growth and, it is pointed out, it has only rarely caused allergic symptoms.

As a basic ingredient of pastes and ointments, lanolin displays many advantages for the treatment of diseases of the skin (17). As Goodman (18) has remarked, hydrous wool fat emulsions are still popular and they have a decided field of application in dermatology. Lanolin is one of the most valuable cosmetic ingredients available since it combines known emollient power for the skin with a high degree of emulsifying power. Although there is some question regarding the extent of the absorption of lanolin by the skin, or its ability to promote penetration of other components in lanolin-containing bases, there is little room for doubting its value for softening dry skins (9).

Over the years, lanolin has established a really enviable reputation as an emollient (19). Invaluable for thin, dry skins, lanolin helps to combat the elements of modern living and working conditions which tend to rob the dermal surfaces of their natural protective fatty coating. Emollient creams, noted Fantus (20), fittingly contain wool fat, which in its chemical composition resembles the sebum closely and hence might be considered the ideal restorative for the sacrificed fat of the skin.

"Lanolin is an emollient of the first order," says Lower (6). "A really remarkable feature is the manner in which it makes the skin smooth and soft, even if mixed with oils which would normally give rise to roughness and cracking of the skin."

This outstanding quality is one of the most important reasons why lanolin is finding such extensive use in newer preparations which counteract the effects of solvents, alkalies and other industrial chemicals which deprive the skin of its protective fatty layer. Thus, lanolin is recognized as a really essential ingredient of modern skin protective creams and ointments

to combat industrial dermatoses. Similarly it has a proved valuable role in after-work emollients to replace skin fats lost as a result of contact with a variety of industrial raw materials, especially organic solvents.

BORROWING from both the der-matologist and the cosmetician to make improved products, skin protective preparations are designed to combat the deleterious effects on the skin of various substances encountered during the day's work. A great deal of work has been done in the prevention of industrial dermatitis and workers in this field found out at an early date that lanolin is a most suitable agent for this purpose. Back in 1921, for example, McConnell (21) advised that equal parts of hydrous wool fat and olive oil be applied to the hands and arms of printers before they commence work.

Since that time, many lanolincontaining protectives have been devised and recommended to meet various industrial conditions, especially for those in which there is a tendency to a skin drying and defatting action (6, 22, 23). Of significance is the fact that wool fat is included in five of the nine skin protectives developed by Klauder (24) and his associates, and in four of the six basic type formulas given by Schwartz (25). Both of these series of protectives were included in the report of the Committee on Occupational Dermatoses of the American Medical Association (26).

In experimental studies, the Tworts (27) showed that equal parts of olive oil and anhydrous wool fat made the most efficacious ointment for protection from the carcinogenic action of mineral oils and tars. It was recommended that this mixture be applied to the exposed skin of workers handling such materials before commencing work, and that at the end of the day the soiled skin be thoroughly washed with soap and water and that hydrous wool fat again be applied. More recently, Schwartz (25) advocated a similar mixture (anhydrous lanolin 70 per cent, castor oil 30 per cent) as a protective against the entrance into the pores of harmful petroleum oils, greases, and coal-tar derivatives. Such a protective is useful against cutting oils, greases, creosote, pitch (28), rust preventives, tetryl (29), and the like. Because fat solvents must first act on the film of ointment before they can attack the skin, this type of protective also offers some protection against solvents by buffering their action on the skin.

The emollient value of lanolin also comes into play in applications to be used after work. For this purpose, Klauder and his associates (24) advise that equal parts of hydrous wool fat and olive oil, cottonseed oil or neat's foot oil be applied to the hands at the end of the working day, especially in winter. Schwartz and Dunn (30) feel that workers inclined to have dry skins which chap easily should use a suitable preparation, such as equal parts of lanolin and cold cream, on their hands after cleaning up from the day's work. Where stronger cleaners are required to remove certain types of grime, the use of the protective lanolin-castor oil combination is suggested as an emollient to overcome any harsh effects of the cleanser

FAR from being irrelevant, all of these foregoing applications have an important bearing on the role of lanolin as a superfatting agent for soaps. They serve to reaffirm its role as an emollient, stress its benefits to the skin, and enhance the long-established confidence of the dermatologist in its general efficacy.

As a superfatting agent lanolin has much to recommend it, and as previously indicated, there are those who consider it the best material for this purpose. According to Smith (31), lanolin has two outstanding characteristics that make it useful in soaps, its emollient effect and fredom from rancidity. Aside from the good effects produced upon the skin, notes Augustin (3), superfatting with lanolin offers certain other advantageous factors which warrant consideration. It does not become rancid in the soap, does not induce rancidity, does not hinder the homogeneous preparation of soaps, but rather promotes its

smooth appearance and it does not affect the perfuming adversely.

Indeed lanolin is said to offer a certain protection to perfumes sensitive to alkali. In this connection, Glenn (4) has observed that melted lanolin is a solvent for most perfumes and oil-soluble medicaments, and may be used as a vehicle for their incorporation into soaps. In the proportions generally used, refined anhydrous lanolin does not deepen the tint of soaps to any marked degree. Where supplemental superfatting agents are employed, lanolin will be found to be miscible with such materials (3, 6).

On the debit side, however, is the fact that, in toilet soaps superfatted with lanolin, the lathering power is less than a similar unsuperfatted soap. This poorer lather quality can be overcome to a marked extent by the use of a higher percentage of coconut oil in the fatty mixture or by employing triethanolamine soaps, stearin alcohol or similar substances (3).

Superfatting in general offers certain definite advantages to soaps, particularly in toilet soaps. From the manufacturer's angle, among the advantages to be derived from superfatting are the following: (A) it prevents excess free alkali; (B) reduces the tendency to split or crack; (C) makes the milling process easier; (D) usually results in a smoother, creamier lather (4). However, soaps containing too large a proportion of superfat do not lather well. In formulating superfatted soaps, modern manufacturers have evidently added as much superfat as possible while still effectively maintaining lathering ability at a desirably high level (32).

As already mentioned, superfatted soaps were originally devised in the hope that the excess fatty material would overcome the irritative action of free alkali on the skin. This view is no longer accepted. A newer concept, as explained by Kile (32), is that the use of superfatting materials in soap seems to be directed toward decreasing its defatting effect on the skin rather than toward counteracting its alkalinity.

ERMATOLOGISTS are not fully agreed as to the value of superfatted soap. For example, Klauder, Gross and Brown (24), who include lanolin in most of their skin protectives and recommend a lanolin-containing mixture as an after-work emollient, are of the opinion that superfatted soap has been unduly emphasized as a toilet soap. Lane and Blank (33) have expressed a similar view.

Nonetheless, other dermatologists have frequently spoken highly of the value of superfatted soaps. Stillians (34), for one, has stated that such products, made with a small proportion of wool fat, are the least irritating soaps. Writing in a popular medical text, he (35) stated that, "For dry and delicate skins, superfatted soap is made by removing as much as possible of the free alkali and adding wool fat. This does not become rancid and leaves a film upon the skin to replace that removed in washing. These superfatted soaps are only a little less efficient as cleansers than the regular soaps and for babies and older persons with dry skins are highly recommended."

Similarly, Pusey (36) has observed, "When, however, it is desired to overcome completely the effect of the alkali, soaps are superfatted, as it is called, by the addition of about one per cent of lanoline, a fat which does not become rancid. These superfatty soaps are the least irritating of soaps and are little, if at all, less efficient for cleansing the skin than ordinary toilet soaps. When soaps are for any reason badly borne by the skin, these superfatted soaps are useful, although such refinement in soaps is not necessary for the ordinary individual."

According to Goodman (14) superfatted soap is recommended for thin skin. More recently, Kesten (37) stated that superfatted soaps are to be preferred in the treatment of dry, chapped skin since they are less hard on the skin under such conditions than the ordinary soaps. Calling them the mildest of soaps, Tobias (38) writes that superfatted soaps are indicated in all conditions where an ordinary soap

would be irritating, e.g. mild eczemas, xerodermia, senile pruritus, etc.

In his own experience, Kile (32) had observed that patients with dry skins definitely prefer to use a superfatted soap. To determine whether the reasons for this preference are real or psychologic, he undertook an objective study of the difference between superfatted and ordinary toilet soaps in their effects on the skin. In these investigations, 57 young women (nurses) were divided into two groups; one group being given a supply of plain stamped bars of ordinary toilet soap, while the other received a superfatted soap of similar appearance. The soaps were made from the same stock, having a fat formula similar to that of a high grade toilet soap, and both contained the same kind and amount of perfume. The only difference was that 1.5 per cent of hydrous wool fat had been milled into the superfatted soap. This formula, Kile remarked, is comparable to formulas for superfatted soaps available on the open market.

Each group used their given type of soap for a two-week period, after which the kind of soap supplied was reversed. The subjects of the test had no knowledge of what the difference in the two soaps might be. Weekly examinations were made to determine whether there were any objective effects of the soap on the skin. At the same time each subject was questioned with regard to her own appraisal of the soap used.

After tabulation of the data, it beame apparent that there was a true difference between the soaps in their effects on the skin. The evidence indicated that more discomfort was experienced during the use of the control (ordinary toilet) soap than during use of the superfatted soap. In this connection it was interesting to note that most of the women who reported discomfort with the use of either soap had dry skins. Of particular pertinence was the finding that dryness of the skin was observed in more subjects during use of the control soap than during use of the superfatted soap. This ratio was 3 to 1 for the entire group and 4 to 1 for the group with dry skins.

Subjects with dry skins showed a definite preference for the superfatted soap, while women with normal or oily skins preferred the control bar. The lathering properties of the superfatted soap were less satisfactory than those of the control. The ordinary toilet soap gave a greater abundance of lather.

NDOUBTEDLY one of the most important indices of the value of a soap superfatted with lanolin appears in the recommendations of Schwartz (25) for a normal industrial cleanser for general use. Since he is a Medical Director of the U. S. Public Health Service and is Chief of the Dermatoses Investigation Section, Division of Industrial Hygiene, National Institute of Health, Schwartz's recommendations and standards are based upon extensive experience in the field of dermatitis control.

After setting up specifications for a suitable cleanser, he stated that in order to meet these requirements, a normal industrial cleanser for general use should consist of a superfatted neutral toilet soap, containing a wetting agent or synthetic detergent, and a soft scrubber which softens or dissolves in water and does not clog the plumbing. It should contain a minimum of free alkali, and have a pH of 10 or less in a one per cent solution. It should contain no silica, quartz, pumice or feldspar, nor any rosin fillers or organic solvents. A type formula meeting these specifications was given by Schwartz as follows:

Neutral to									
Colloidal									
Synthetic	dete	rge	nt			8	*	×	10
Lanolin .								*	4
Perfume									1

In passing, it might be mentioned that this cleanser is included in the report of the Committee on Occupational Dermatoses of the American Medical Association (26).

In a talk delivered last year, Schwartz (39) stated that workers who have dermatitis or thin, dry defatted skins, should not use the ordinary industrial cleansers. It is better for them to use one of the superfatted soapless cleansers, the pH of which is

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## LEGAL PHASES

## OF THE SOAP BUSINESS

LEO T. PARKER

A NUMBER of significant decisions in court actions involving soap companies have been handed down during the past year. A review of these decisions, and some of the factors taken into consideration by the courts in arriving at them may be of general interest to other soap companies.

Trade mark cases are quite common in the industry, and the U.S. Patent Office has consistently held that no trade mark may be used or registered which is likely to confuse the buying public, or which will enable a manufacturer to obtain sales unfairly as a result of the advertising of a competitor. For illustration, in Lactona, Inc., v. Lever Bros. Company, 144 Fed. Rep. (2d) 891, reported August, 1944, testimony indicated that Lactona filed an application for registration of a trademark "Lifeguard," for use on tooth brushes. This company had used the trade-mark "Lifeguard," for some time.

Lever Bros Company, owner of the trade-mark "Lifebuoy," objected to registration of "Lifeguard," and showed that in advancing sale of "Lifebuoy" soap it has expended millions of dollars in advertising its trade-mark on "products for cleaning"; that the "trade and the public have long been familiar" with its trade-mark "Lifebuoy."

Although the testimony proved that the mark "Lifebuoy" is not being used on any goods other than common soap and shaving cream, and particularly the term "Lifebuoy" is not being used as a trade-mark for mouth washes, tooth washes, tooth pastes, tooth powders or any other products relating to oral hygiene, the higher court held that the new trade-mark "Lifeguard" on tooth brushes and massage elements would be confusing to the public. In refusing to allow registration of the mark "Lifeguard" in the United States Patent Office, the higher court said:

"We are of opinion that the goods listed in registration No. 25,871 (Lifebuoy) (shaving soap, mouth washes, tooth washes, and tooth paste) are goods of the same descriptive properties as tooth brushes and massage elements for the teeth."

Considerable discussion has arisen in the past over the important question: "May a manufacturer in the United States prevent another United States manufacturer from selling competitive products in foreign countries under a trade-mark which is a legal infringement in this country?" Recently, a higher court answered this question of law very clearly in the case of George W. Luft Company, Inc., v. Zande Cosmetic Company, Inc., 142 Fed. (2d) 536, reported August, 1944.

Modern higher courts consistently hold that the ownership and right to a particular trade-mark arises from its use, not its mere adoption. Moreover, a trade-mark is not the subject of exclusive ownership except in connection with an existing business. Therefore, while a corporation may own and have the exclusive right to use a trade-mark in the United States, it cannot prevent use of the

same or infringing trade-mark in a foreign country in which it has not sold its product.

MAJORITY of litigations involving contracts may be avoided if both litigants are familiar with principles of modern law. This statement is well illustrated by the new case of Allen B. Wrisley Distributing Company v. Serewicz, 145 Fed. (2d) 169, reported January, 1945. The facts of this case are that a corporation is the owner of certain patents for manufacturing soap novelties. This corporation made a contract with a manufacturer by the terms of which the former was to furnish the manufacturer soap, and certain manufacturing equipment, and the manufacturer was to process and manufacture soap novelties. A schedule of royalties and manufacturer's profits was set forth in the contract. Title to all soap, rubber, shipping cases and manufacturing equipment was to remain in the corporation.

A disagreement arose between the officials of the corporation and the manufacturer. Neither party had breached any terms of the contract. However, the corporation filed suit to gain possession of the materials and equipment it had sent to the manufacturer. Since the latter had not breached its contract with the manufacturer, the higher court refused to give the latter possession of the materials and equipment. This court said:

"The original contract is still in force in so far as this record discloses, and there is neither a claim nor finding that the defendants (manufacturer) have violated it."

A better knowledge of the principles of contract law by the litigants might have avoided this law suit. The point is that if neither contracting party violates the terms of a contract, both parties remain obligated to abide by terms of the contract. The fact that one of the contracting parties becomes dissatisfied will not entitle him to violate the contract. If he does so he will be liable to the other contracting party for payment of damages.

Modern higher courts consistently hold that all corporations selling soap or other merchandise to a public institution do so at their own risk. In other words, they must know that the one who makes the purchase is legally and lawfully authorized to do so, otherwise payment cannot be enforced. See Missouri Company v. Christian County, 180 S. W. (2d) 735, reported August, 1944, where a seller sued a county for payment of several hundred dollars for soap and disinfectant sold to the county for use in the courthouse.

During the trial the county officials contended that the county was not liable, although actually the materials were received and used by the county. A state law provides that valid sale contracts must be authorized by a majority of the judges of the county court. The seller proved that its contracts had been signed by the courthouse janitor, and that the presiding judge had authorized the janitor to make the various purchases. Notwithstanding this testimony the higher court refused to hold the seller entitled to recover payment for the merchandise purchased and used by the county, saying:

"The janitor was not the agent of the county and his purchases did not bind the county. The same is true of the presiding judge. He likewise was not the agent of the county, nor did he have authority in his individual capacity as presiding judge to make a contract on behalf of the county...."

There has recently been an increase in the volume of litigation involving labor disputes, or union acti-

vities. For illustration, in National Labor Relations Board v. Revlon Products Corporation, 144 Fed. (2d) 88, reported September, 1944, it was shown that the corporation is engaged in the manufacture of soap products and cosmetics and employes from 150 to 220 workers. Leon Rosenberg, a C. I. O. Union organizer, entered the corporation's building and the service manager of the plant ordered him out of the place and allegedly pushed him from the building. Later although visiting union members made no noise and did not threaten the corporation's employes, they were allegedly ordered out while handing out circulars. Also, the corporation's officials allegedly discharged certain employes who joined the union.

Suit was filed against the corporation, and the higher court ordered the corporation to reinstate the discharged employes. Moreover, the court ordered the officials of the corporation to cease and desist from unfair labor practices.

MODERN higher courts consistently hold that officials of corporations are responsible for false or misleading advertising of products sold by the corporation. But while misleading advertisements are illegal, if directions advertise a preparation so that it will be harmless to users such advertisements are legal.

For example, in Gelb v. Federal Trade Commission, 144 Fed. (2d) 580, it was shown that the Federal Trade Commission sued Clairol, Inc., a New York corporation, and three individuals who were its officers and controlled its advertising policies and practices. The complaint charged violation of the Federal Trade Commission Act in advertising two cosmetic preparations for shampooing and coloring the hair known generally as "Clairol" and specifically as "Progressive Clairol" and "Instant Clairol."

Later the suit against the corporation was dismissed because of its dissolution. However, another corporation was organized in Connecticut. The commission directed the officers to cease and desist from making certain representations in adver-

tising Clairol products. First the officers contended that no cease and desist order should have been issued against them, since they personally did no advertising of Clairol products and the proceeding was dismissed against the corporation whose advertising was challenged. With respect to this contention the higher court said:

"This contention is without merit. The petitioners (officers) had dominant control of the business activities of the New York corporation named in the complaint and have continued similar control over a Connecticut corporation, Clairol, Incorporated, which succeeded to its name and assets."

Another important point of this litigation involved the type or kind of advertising the commission prohibited. These advertisers represented that Clairol preparations "recondition the hair." The commission found that the preparations are incapable of reconditioning the hair. A chemist testified that having made an analysis of Clairol he found it to contain dye, soap and a "trace" of oil. Because soap would tend to remove natural oils from the hair, he was of opinion that Clairol coud not "recondition" the hair as he had defined the term, and that it contained nothing to make the hair glossy. Also, the commission forbade representing that "Instant Clairol" is harmless or safe

This decision was based upon a finding that it is not harmless in all cases since it contains a coal tar derivative, paratolylene diamine, and where the user is allergic to such drug, the use of the preparation will result in irritation or rash. However, the higher court modified this ruling of the commission and stated that the new corporation, or its officials, could legally advertise and sell its product by advertisements representing that preparation is harmless if used in accordance with instructions contained in package, providing such preparation is harmless if used according to instruc-

The case of Gieb v. Goebei Company, 176 S. W. (2d) 975, re-(Turn to Page 86)

## Industrial Sanitation . . . .



N THIS rapidly changing world, an antiquated concept of sanitation will not meet modern needs any more than a witch-doctor can control typhus fever. Therefore, not only should present concepts be

brought up to date, but the future must be envisioned if the shape of things to come is to be grasped. While widespread lip-service is paid to sanitation, dirt and disorder still are rampant, even in areas which are intended to reflect the highest levels of sanita-

Perhaps the most striking change in the concept of industrial sanitation is the extension of the scope of the industrial environment far beyond the confines of the toilet-rooms and lavatories which have heretofore marked its boundaries. Once we accept this concept, we see that the industrial environment includes all those areas where man produces or procures raw materials, generates power, applies this power to machines, processes raw materials, or distributes the finished products to supply the needs of our society. The mechanized nature of our civilization draws many institutions into the periphera of the industrial environment; offhand we may not think of hospitals, schools, state institutions, hotels, restaurants, and transportation as industry, but they do constitute a vast area of serviceindustry where industrial sanitation must function even more effectively than it does in manufacturing industry. In this field, no less than in heavy industry itself, people constitute a major part of the environment and must be so recognized for, from our point of view, they become important as the source of some of the most perplexing sanitation problems. Furthermore, the sanitation levels prevalent within industry filter out into the community, which in a sense, becomes a secondary part of the industrial environment.

The new industrial sanitation is more than simply the application of the principles of cleanliness to this vast industrial area. It has for its objectives maintaining, modifying, and improving the industrial patterns now accepted. These objectives are attained through the five fundamental functions which it performs. The first function—perhaps the most widely neglected—is prevention—that is,

A forward looking concept of the future position of the sanitary products industry which envisions a considerably expanded role for manufacturers of sanitary products

By M. H. Solworth\*

Joseph E. Seagram & Sons

thwarting dirt and disorder before they can interfere with the industrial processes or personnel. This concept of preventive sanitation is the key to a really effective industrial program.

The second function is expressed by the term corrective sanitation, and is at present most widely practised of all, for most industry, when it does any cleaning whatever turns immediately to the mop and the broom, which are symbols of the failure of the other functions of industrial sanitation. However, corrective sanitation can be vastly improved; at its best, it embraces laboratory research on both products and technology and requires the education of industrial personnel; at its worst, it can be more detrimental than dirt itself.

Protective sanitation involves primarily the protection of industrial property against deterioration. This means the protective care of all surfaces, the exclusion of rodents and insects from both materials and buildings, along with the protection of machinery and equipment from the ravages of harmful substances such as dust, dirt, and moisture, as well as from the damage done by careless or ignorant cleaning.

Industrial sanitation also has a hygienic function, a responsibility for maintaining the sanitation of lavatories, locker-rooms, toilets, first-aid stations, and cafeterias, along with the responsibility for keeping operational areas, machines, and protective facilities clean; it may also have a large share in controlling both ventilation and lighting. Through protecting the health and well-being of the employee, it contributes directly to the maintenance of morale.

Last, the new industrial sanitation has an esthetic function. The effect of industrial esthetics is already recognized as so potent, however, that progressive industry is moving ahead

to develop this field, as can be seen in the recent and spectacular developments in color-dynamics, in furniture design, in streamlined facilities, in the harmonious arrangement of masses in space. Industry is learning that clean and beautiful buildings, set in the midst of well-groomed grounds are a good investment, that clean and comfortable interiors, pleasing to the senses, pay high dividends, that sanitation made pleasant and easy is sanitation made prevalent, that high standards of dress, cleanliness, and personal appearance make for better workers and a cultural upgrading which extends throughout the industrial community. In the last analysis, the keynotes of the new sanitation are esthetics and efficiency applied to the entire industrial environment. This is the tremendous field served by industrial sanitation: it is a far cry from the old concept of sanitation restricted to toilets and lavatories, manned by the least desirable type of personnel, and administered with primitive tools and materials.

The place of the sanitary products industry: The new concept of industrial sanitation fixes the position of the sanitary products industry in the scheme of things, where sanitation will be the result of the carefully planned intermeshing of architecture, engineering, personnel education, the active interest of management, the geographical location of plants, and sanitation department itself, through which these forces are coordinated. These are the factors which determine industrial sanitation levels; no one of them is effective by itself, but all working together result in controlled sanitation.

The intelligent cooperation of the architect is of prime importance in the adding of new buildings or the remodeling of old ones, for architecture holds the key which locks out

<sup>\*</sup> Address before 31st Annual Meeting, Nat'l Assn. of Insecticide and Disinfectant Mfrs., New York, Dec., 1944.

dirt. Not only can planned architecture prevent the entrance of dirt—including rodents, insects, and all other deleterious elements—but it can, through functional design, make dirt and disorder easier to attack. Engineering bears the same relationship to the design of machinery and facilities which, in the future, must give us more dirt-free industrial processes, and, in cooperation with architecture, eliminate much of industrial dirt and disorder at its source.

In planning a controlled sanitation program, the engineer and the architect should consider climate, transportation facilities, the proximity of other industry, soil conditions, and other pertinent physical factors. Through personnel education, janitors can be upgraded and developed into effective, specialized workers; general industrial personnel can be made an active agent in the program if its interest is enlisted and if the technology is provided; the individual worker is, in the last analysis, the starting point for most industrial dirt.

The active interest of all management is essential in the motivation of a sustained sanitation program; management must fix the responsibility for activating sanitation upon reliable, aggressive executives. The sanitation department-at present in most plants largely corrective and not too effective even in that functionmust regard itself as the coordinating and integrating force behind the facfors just mentioned. It must be staffed by men who are capable of utilizing every available aid about them, and at the same time desirous of cooperating in all fields related to sanitation -health, hygiene, safety, morale work, public relations, etc. The sanitation department must assume the responsibility for training both janitorial and general personnel, for providing and developing the needed tools and equipment, and for understanding the delicate and all-important balance between industrial sanitation and the sanitary products which instrument it.

It will be noted that the sanitary products industry contributes only two comparatively small items—tools and sanitary products—to the concept of controlled sanitation. While these items are at present indispensable to corrective sanitation, let me suggest that total dependence upon corrective sanitation is on its way to obsolescence—and with it the overemphasis on tools and products which constitute a large and fertile area in which improvement can be made.

There are several aspects of controlled sanitation which do not, at present, appear to hold much interest for the sanitary products manufacturers. First of all, consider preventive sanitation. The impact of better architecture, ec'ucation, and engineering upon sanitation is directly opposed to the interests of most sanitary products manufacturers. The

chief reason for this is that the sanitary products industry is, at present, dependent upon the presence of dirt in industry plus a corrective attack on that dirt through sanitary supplies. This is an unstable tic-up, because the technology of tomorrow will, through engineering, provide controlled ventilation-soot-and-smoke control which, together with lawns and landscaping, will practically eliminate incoming airborne dirt. Within production areas, improved engineering design will remove all except an inconsiderable quantity of production dirt and the residue of human activity. Architectural design will, through special features, reduce the prevalence of insects and rodents, thus converting sporadic extermination into permanent preventive action. Improved interiors will not have horizontal ledges, surfaces, or bric-a-brac to catch dust, thus simplifying the removal of whatever dust may escape controlled ventilation.

PLOORS are the natural place for dirt to accumulate; industrial architecture is so designed that dust will collect there. If the floor is both by nature and design the point of concentration, why should not better floors be built- floors unobstructed, durable under the recurrent impact of dirt and wear and easy to clean? Certainly the ones now used in industry are far from perfect. Cleaning will be even further simplified by the development of new insect-proof materials, glossy plastics, and non-corrosive metal alloys which need no polishing. Some of these materials already await release. New design in windows will make present window-washing procedures obsolete.

All in all, these developments will reduce the demand for cleaners of all kinds, deodorants, insecticides, disinfectants, and most of our present cleaning tools. Personnel education and janitor training will effect a marked decrease in man-made dirt in the industrial environment, leaving only a fraction of the present quantity, which will, in turn, be disposed of without the use of primitive tools and technology; in fact, mechanized cleaning tools are already being developed to use a spectacular minimum of detergents and other products. The present sanitary products industry is not only dependent upon the presence of dirt, but is based upon the retention of the ignorant janitor-that high priest of the toilet-room, that generous dispenser of sanitary products. At this very moment progressive industries are dedicated to upgrading his quality as well as reducing his numbers in relation to area. The threat that preventive sanitation offers to the markets of the sanitary products manufacturers is not an empty one.

A suggested course of action for the sanitary products manufacturers: The industrial advances just referred to will not affect the sanitary products business instantaneously. There is still time and opportunity for the industry to take its proper place in a changing world. You can consolidate your future by increasing your value to industry, by improving your service, by studying industry's real needs in the field of sanitation and supplying the answers to its problems. The future is bright for those who will make a place for themselves.

Present sanitation levels in industry are pitiful. As a whole, industry is abysmally dirty. Even in most exceptional plants - in those which pride themselves upon high sanitation standards-there is a failure to go very far beyond the most unenlightened corrective procedures. The man with the mop still struggles unsuccessfully to rectify the results of bad engineering and architecture, of ignorant work-habits, of the cumulative neglect of both management and labor. Million-dollar plants are too frequently serviced by janitors who have no qualifications except ignorance and unemployability at better jobs to qualify them for the custody of valuable property. The finest facilities in industry are defiled and defaced by employees who know no better and are taught no better. Intricate machinery suffers in the hands of the industrial derelicts who man most sanitation departments. Health, property, raw materials, equipment, machinery, efficiency, morale, and the social reputations of industry all corrode and disintegrate under a system which is pathetically inadequate to cope with modern industrial problems. There is room for improvement in every plant in the country, and that includes the very best. There is right now a tremendous opportunity for you to help clean up industry and keep it clean. Industry is interested and the new sanitation movement is gaining momentum.

With this increased interest in the new movement, there is a changing concept regarding those who need and want sanitation. The fact is now accepted that sanitation need not be restricted to food-handling establishments and other industries compelled by law to maintain some respectable levels-levels which are in most cases already obsolete. The sanitation standards in other industries are low; they have been kept that way because of the low sanitation consciousness of industry as a whole, and even the sanitary products industry itself. Reflect for a moment upon the standards in your own plants; are they high enough to serve as models? If you think honestly about your attitude toward your own plants, you will perhaps agree that you have a long way to go before you are ready to lead the rest of industry. However, progressive industry is going to increase its efforts to learn and to practice scientific sanitation. As the larger plants move out in front, the smaller sub-standard plants will

be forced to fall in line. There is so much to be done that all plants will, for the present, and for some time to come, support an ample market for tools and products; it is during this interim that the sanitary products industry has the opportunity to shift over to progressive programs, for which there will be a continually ex-

panding market.

For a while all of us will profit from the impetus given industrial santation; your sales of products and equipment will increase as interest rises and higher sanitation levels are taken for granted. Also, the effects of improved industrial sanitation are already carrying over into homes and communities; in these areas there will be an increase in the sales of your products, an increase which will hold its own only until the public learns that products alone are usually only a temporary palliative-and often an ineffective and expensive one at that. With large-scale industrial improvement and effective educational work, the market for magic cleansers and disinfectants will dwindle away. Industry's real needs cannot forever be ignored by offering expedient makeshifts.

In addition to selling supplies, the sanitary products industry should prepare to think in terms of these changing concepts; it should study the processes, the needs, the conditions, and the methods used in industry with a view to supplying service in the best sense of the word. A tentative venture in that direction has already been made with the cooperation of the large Seagram-Calvert distilleries. A brief description of the program at work there will perhaps convey an impression of how rapidly the old concepts are giving way to new.

A program at work: In several plants we have been experimenting with controlled sanitation. We say "experimenting" because we do not have the answers to all our problems yet. We regard it as little more than a start in the right direction. But at least we are aware of the problems and are working toward the answers. Through this program you can catch a slight glimpse of some of the changes which the future holds in store.

The first point of interest in this controlled sanitation program is its organization. No large plant can operate without a schedule of controls and responsibilities; yet most sanitation departments at present operate through a weak and disorganized setup which would not hold up in any other area of modern industry. We radically alter the conventional sanitation organization in order to make full use of our entire staff of executives, and, in the last analysis, of every one of our 5,000 employees.

In contrast to the usual industrial sanitation, this system of controls hinges on departmental units. The departmental sanitation plan places the responsibility not upon a vague, de-

centralized sanitation authority, but directly upon the department-head himself, whose responsibility is fixed by a directive outlining the sanitation policies of the company. Directly under the department-head are two types of supervisors, one responsible for operations and the other in charge of sanitation procedures within the department. Both of these supervisory groups exert pressure upon all personnel, the one on operators, the other upon sanitors, to keep sanitation levels up to specifications, and Seagram levels are probably among the

highest in the country. The department-head cannot consider operations in his department successful unless these levels can be maintained; if all executives in industry had so conscientious an attitude, the standards of industrial sanitation would be rapidly and effectively raised. Incidentally, this situation reflects another changing concept — the nebulous responsibility under which the older sanitation operated is now giving way to responsibility clearly crystallized in the sphere of top management.

(To Be Concluded)



#### M M & R 50 Years Old



The principals in Magnus, Mabee & Reynard, well known New York perfuming materials house. Left to right, they are Robert Magnus, Joseph Magnus and Percy Magnus, present head of the company. The painting is of the late Percy C. Magnus, Sr., founder of the firm.

ITH the completion of its fiftieth year, Magnus, Mabee & Reynard, Inc., New York, has just announced the completion of another building to house its expanding manufacturing facilities. The new annex is a five-story building of modern glass and concrete design and stands next to the company's other two buildings on Desbrosses St. It will add 10,000 square feet to present facilities.

MM&R was founded in 1895 by Percy Cecil Magnus, Sr., father of the present president, Percy C., Jr., and Joseph B. and Robert B. Magnus, both vice-presidents. The business was started when Percy C. Magnus, Sr., purchased an interest in McKensie Brothers & Hill, the name under which the firm was originally known. Later, the two McKensie brothers withdrew and the firm was shortly thereafter reincorporated under the name of Mag-

nus & Lauer. In 1906, the company was merged with National Essential Oils Distilling Co., of Chester, Conn., and assumed its present name. Percy C. Magnus, Sr., became president and subsequently bought out the interests of D. W. Mabee, vice-president, and G. C. Reynard, secretary. He was succeeded as president by his eldest son on his death in 1916, and his two other sons, Joseph and Robert, joined the firm in 1916 and 1920, respectively. Their oldest employee from length of service is William F. Fischer, assistant treasurer and general sales manager, who joined the firm in 1907. In 1938 the firm moved to its modern seven story building at 16 Desbrosses St., while in the same year in Chicago Talmadge B. Tribble was appointed to take charge of mid-western sales. In the following year he was named a vice-president.

## Development of a

## GERMICIDAL SOAP

N ORDER to evaluate the germicidal properties of G-11 in soap, in vitro tests were conducted, following the methods outlined in Circular No. 198 of the Food and Drug Administration. The experiments showed that a soap containing 2 per cent of G-11 will kill Staphylococcus aureus at 37° in 10 minutes when diluted 1:20 with water. Investigations carried out by two independent laboratories gave similar results; in one case, killing of Staph. aureus was achieved in 2 min. at 37° with a 1:20 dilution of a 2 per cent G-11 soap, whereas, in the other study, 5 minutes were needed with a dilution of 1:10. Such variations are not surprising to anyone familiar with the limitations of the test methods.

The type of soap used has no significant influence upon the bactericidal action of G-11, with the possible exception that the soap must contain a fairly large amount of cocoanut oil fatty acids in order to be active against the typhoid and coli group. Other properties of the soap, such as pH, lathering power, odor or detergency, are not affected by the presence of G-11.

The results obtained in vitro led to a series of investigations which should demonstrate the germicidal action of soaps containing G-11 when used on the skin and when applied to wounds. For the latter purpose, in vivo experiments were conducted on rabbits, following in general the technique outlined by Simmons (25). In order to minimize discrepancies which are unavoidable in this type of in vivo testing, fifteen animals were used. Soap containing 2 per cent of G-11 was compared with a soap of identical composition, lacking only the germicide. The results showed definitely that the

G-11 soap produces a marked decrease in the bacterial count of superficial wounds.

Skin disinfection by the use of chemicals and by mechanical cleansing has been intensely studied and discussed. Price (3), taking up this important subject again, became convinced that the tests for determining the efficacy of skin disinfectants were not satisfactory and for that reason devised a new method, establishing a rational basis for the evaluation of surface germicides. As sterilization of the skin, meaning the destruction of all micro-organisms on and in it, is impossible to achieve. Price speaks of "degermation," meaning by this the reduction of the number of microbes, pathogenic or non-pathogenic, in or on the skin.

The principle of Price's method is simple. Washing of the hands and arms with soap and rinsing in a basin of sterile water removes a large amount of live bacteria. The exact number can be calculated by culturing a measured sample of the rinse water, counting the colonies and multiplying this figure with the total volume. On repeating this scrubbing of the hands and forearms in a perfectly uniform manner and rinsing in a series of basins, progressively decreasing numbers of bacteria are found in the rinse waters and a regular, logarithmic curve may be plotted. Influences which cause a decrease or increase of the number of bacteria carried over into the basins cause deviations of the normal curve and can thus be measured in relation to the standard. Therefore it is possible to determine with satisfactory accuracy the quantitative action of the use of germicides or of

By William S. Gump

Givaudan-Delawanna, Inc.

Part II

other effects, such as wearing of rubber gloves, upon the skin flora.

Price (26) showed by this method that 70 per cent (by weight) of ethyl alcohol is an efficient germicide on the skin, an observation which was corroborated by the experiments of Neufeld and Schiemann (27). On the other hand, Price (28) reported that none of the commercial toilet soaps used by him possessed any germicidal activity against the resident flora of the skin, the only action of the soap being the mechanical removal of part of the bacteria. Pohle and Stuart (10) also studied the skin-degerming behavior of various soaps, applying a minor modification (29) of Price's technique. They, too, showed that ordinary soaps are of low germicidal power, but that rosin soaps, and cocoanut oil soaps containing rosin, have an increased activity against the microbes of the human skin. Of particular interest is their finding that persons who used rosin soap regularly for one week showed a distinct reduction in the bacterial counts of the transient and resident flora of the

All this is perhaps a rather lengthy but nonetheless necessary introduction to the subject of the methods of testing and the results obtained in the study of the action of G-11 soap upon the bacterial flora of the skin.

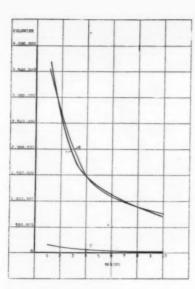
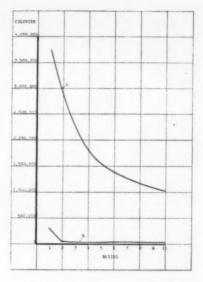


Fig. 1 (Left). A, Initial washings, control soap used in all basins. Average of 14 subjects. B, Control soap used in all basins. Average of 4 subjects who bad used control soap for a period of 1 week. C, Control soap used in all basins. Average of 10 subjects who bad used 2 per cent G-11 soap for a period of 1 week.

Fig. 2 (Right). A, Initial washings, control soap used in all basins. Average of 25 subjects. B, Colony counts on one subject who had used 2 per cent G-11 soap for a period of 1 week. Control soap used in all basins.



TANDWASHING experiments on a fairly large scale were carried out by Traub and his collaborators (23) with soaps containing Compound G-11. They applied Pohle and Stuart's modification of the Price method, with slight changes and improvements of their own. Their experiments showed that a most significant reduction of the bacterial flora was obtained by the regular routine use of 2 per cent G-11 soap over one week; in other words, the soap was used just as any toilet soap is or would have been. Furthermore, this reduction affected the resident, rather than merely the transient, bacteria, so that the germicidal benefits of the soap were not lost when the hands became soiled or when the person reverted to ordinary soap for a single washing.

The marked effect of G-11 soap upon the skin flora is evident from the graphs of Figure One. It is seen that there is no difference in the normal curve from one week to the next if ordinary soap is applied. With G-11 soap, however, the skin bacteria are decidedly reduced and this degermation will last as long as the G-11 soap is used. Soapy water of basin 1 contained about 200,000 bacteria compared to about 3,500,000 in the same amount of rinse water from persons who had used ordinary soap for one week.

Even if the hands are quite dirty and apparently heavily contaminated, the bacterial flora of the skin is low. A football player, one of the group using G-11 soap for one week, came straight from practice for the final washings. Contrary to what might be expected, in view of the dirty state of his hands, the first rinse basin gave a count of 290,000 colonies, only slightly higher than the average, and the second basin showed the normal figure (Figure Two).

It should be noted that the test washings after one week's use of G-11 soap were done with ordinary soap; for that reason, the low counts obtained represented actual killing of the bacteria and could not be attributed to inhibitory effects of the germicide, as the soap contained none.

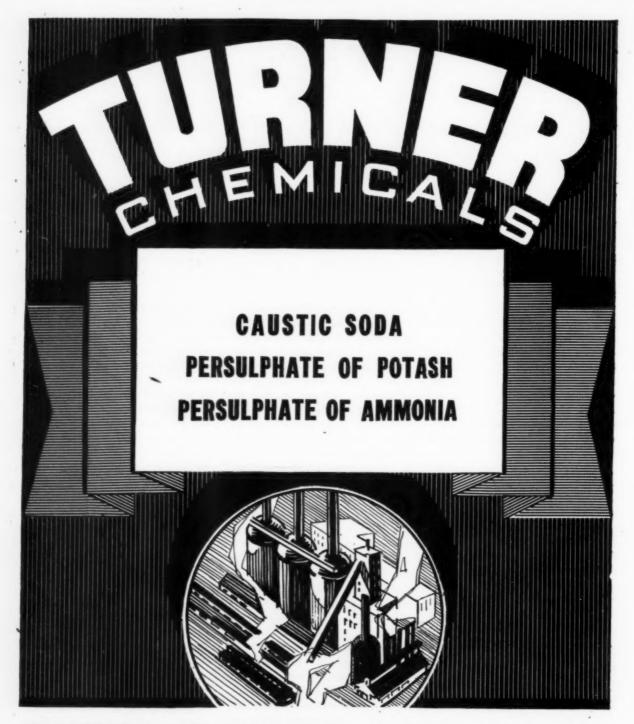
Traub et al. stated that "an individual using this soap regularly has a lower resident count after two minutes of washing than an individual who washes for 20 minutes with ordinary toilet soap." On the other hand, one week's use of soap containing two per cent of potassium mercuric iodide these investigators report, "does not give a significantly greater reduction bacterial flora of the skin than ordinary toilet soap."

Udinsky (24) demonstrated the effectiveness of soap containing 2 per cent of G-11 by applying a simplified swabbing technique in place of the more elaborate washing method used by Traub. The tests were carried on continually over a period of approximately eleven months, this time being divided into eight intervals in which ordinary soap was used, alternating with seven periods in which G-11 soap was employed. The average bacterial count for the dorsal area of one hand for the periods of the control soap was 1840, and for the periods of the G-11 soap 43. These figures again prove the ability of G-11 soap in maintaining an extremely low skin flora during its regular daily use, and are in good agreement with Traub's data.

The probability of infection following skin abrasions and superficial wounds should be reduced when soap containing G-11 is regularly used for washing. Such infections might occur more frequently in persons who are carriers of pathogenic staphylococci. Traub et al. (30) could demonstrate that pathogenic staphylococci disappear from the skin of such carriers after one week's use of G-11 soap.

In view of the fact that the regular use of G-11 soap over a period of one week had shown such a great reduction of the skin flora up to the tenth basin of the test washings, Traub et al. (23) studied the action of G-11 soap in the surgical scrub-up technique, the procedure for degerming the hands immediately prior to surgical work. Their results showed that a person using G-11 soap for one week will reach a low bacterial level practically at the

(Continued on Page 85)



## JOSEPH TURNER & COMPANY

RIDGEFIELD, NEW JERSEY

83 Exchange Place, Providence, R. I.

435 N. Michigan Ave., Chicago 11, III.

## TRADE EWS...

#### WFA Again Cuts Soap Fat Quotas

The War Food Administration has just released a new amendment to WFO 42b which makes a further cut in oil and fat quotas for soap making purposes from 85 per cent of the base period figure which applied during the first quarter of 1945 to a new quota of 80 per cent starting with the second quarter. (The base period is the average of quarterly use during 1940 and 1941). The new amendment also reestablishes inventory controls on soap, limiting industrial users to a 45-day supply. Inventory controls had previously been in effect under the old WFO 86, but were abandoned when this order was terminated August 24, 1944.

The reduction in oil and fat quotas will in most cases not mean any substantial cut in present operating rates for major soap companies. When the drop to an 85 per cent rate was announced late in January of this year, the new level was made retroactive to the first of the year. As most companies had been operating well above the 85 per cent rate during January, it was necessary for them to cut back to about an 80 per cent level during February and March to bring their permitted consumption of fats and oils for the full quarter into line with the reduced quota.

#### M. M. Drury Dies

Myron Maynard Drury, vice president of the Allen B. Wrisley Distributing Co., Chicago, died March 16, at Birmingham, Mich., where he had been confined by illness for some time. Mr. Drury, who was 91 years old, had been with the Wrisley Company for 61 years and served as vice president for 24 years. He had been a resident of Evanston, Ill., for fifty years. Burial rites were held at Birmingham March 19. Three sons and a daughter survive him.

#### WFA Soap Division Moves

Offices of the Soap & Glycerine Section of WFA, headed by W. A. McConlogue, formerly located in Room 5131 of the South Agriculture Building, Washington, were moved April 1 to Room 3961 in the same building. The telephone number remains the same, Republic 4142, Extension 5663. Although in the same building, the new Soap and Glycerine office is about a half-mile away from its former location.

#### Nordlinger, Conti, Now Colonel

Stephen L. Nordlinger, who was Vice President of Conti Products Corp., Brooklyn, when he joined the Armed Forces, in which he was a reserve officer as Lieutenant, has recently been raised in rank from Lieutenant Colonel to Colonel, and has also received the Legion of Merit Award. Colonel Nordlinger is now in China.

#### Bohri Succeeds Gensel at Watkins

Hugo S. Gensel, general manager of the J. R. Watkins Co., Newark, N. J., plant is no longer with the company, after having been associated with it for the past 25 years. His future plans are unannounced as yet. V. W. Bohri, who has been with the company for the past 20 years, has been named manager of the Newark plant to succeed Mr. Gensel. Mr. Bohri, during the last three years at Winona, has been engaged in cost and planning activities. He recently returned to Newark to take up his new duties.

#### Announce New Hand Cleaner

A new cleansing cream, "Den-Nex," for use in removing lacquer, paints, synthetic adhesives, and other resistant materials for the hands, etc., was introduced recently by Dennis Chemical Co., St. Louis. The new product is applied by working into the skin and then rinsed off with water.

#### Excess Fat Use Draws Fines

Fines totaling \$15,000 were imposed on Michael Weil and Isadore Wasserman, partners in Cleveland Soap Co., Cleveland, by Judge Freed in Federal District Court, there, recently, following their pleas of guilty to allegations contained in a criminal information charging the use of two and one-quarter million pounds of fats and oils in excess of quotas allowed under War Food Order 42. Weil and Wasserman were each fined \$2,500 on each of three counts contained in the criminal information which had been filed Aug. 18, 1944.

#### "Tish" Initial Sales Good

American Soap Powder Works, Brooklyn, has announced that it will step up by 50 per cent advertising of "Tish," its new, soapless detergent, which was introduced last month, because sales reaction to the product had been so good. Newspapers in the New York metropolitan area and the suburbs will be used for the increased schedule going into effect during April.

#### Oil Chemists Cancel Meeting

The 36th annual meeting of the American Oil Chemists Society, which was to have been held in New Orleans, May 9 to 11 has been cancelled, it was announced recently by Dr. Klare S. Markley, president of the society.

#### James Murphy Rejoins Shulton

James W. Murphy, former Boston sales representative for Shulton, Inc., New York, has rejoined the sales department of the Shulton Boston branch after having recently received an honorable medical discharge from the U. S. Coast Guard. He entered the service on Nov. 12, 1942, and for the past two years has been on convoy duty.

#### Fat Salvage Advertising Expanded

A greatly accelerated advertising schedule on behalf of the fat salvage campaign was scheduled to get under way during the last two weeks of March and continue through April and May, the American Fat Salvage Committee announced last month. According to the release announcing the stepped up advertising schedule, advertising in all U. S. daily newspapers has been doubled and the campaign extended to all county seat newspapers. Over 4,000 newspapers are being included in the revised schedule. Increasing the daily newspaper advertising schedule is a direct result of a test campaign conducted in two areas during December, January and February, in which doubled advertising pressure produced approximately one-fourth more salvaged fat. How badly waste kitchen fats are needed to help relieve the critical shortage of fats and oils may be understood from the following quotation from the War Food Administration: "Military and industrial requirements for fats in 1945 are more than two and one-half times 1940 governmental industrial uses and well above those of 1944. We must also meet essential civilian needs. To meet all needs, it will be necessary to draw on supply sources other than those coming from imports and domestic production. The most fertile source is used kitchen fats."

#### Awards for Glycerine Uses

Winners of the Glycerine Producers' Association's contest for the best list of uses for glycerine, actual or recommended, and not covered in the Association's booklet "Nothing Takes the Place of Glycerine-1583 Ways to Use It," were announced Mar. 14. First prize, consisting of a \$100 war bond. went to Hobert D. Young, Diesel engineer in the Engine Laboratory of Sinclair Refining Co., East Chicago. Four second prizes, each consisting of a \$25 war bond, were awarded. Among the uses to which glycerine might be put, as outlined in Mr. Young's and several of the other contestant's lists, were: as a penetrating oil for Diesel engine injectors, as a lacquer and gum solvent on pistons of gasoline and Die-



"pHisoderm," a new synthetic, sudsing and emollient detergent cream, currently marketed through the drug trade by Fairchild Bros. and Foster, a subsidiary of Winthrop Chemical Co., New York, comes in the three styles shown above: Regular, for the average skin (left), oily (right) for dry skins and in plastic-ejector dispenser (center).

sel enginc3, as a coolant for high temperature internal combustion engine operation, to improve whipped cream, and to keep stored silver bright and clean.

#### Ivory Account Man Joins Grant

Everett Bradley, formerly account executive on the "Ivory" soap account with Compton Advertising, Inc., New York, has joined Grant Advertising, Inc., as vice-president in charge of the Chicago office, it was announced last month.

#### F. J. Arthurs Changes Name

The chemical, soaps and raw materials distributing and jobbing business for industrial, institutional, municipal and general trade, operated since Sept. 1, 1938 as F. J. Arthurs has been incorporated to become Arthurs-Buffalo Chemicals, Inc., according to an announcement issued late last month. Elected officers of the corporation are: president, Fred J. Arthurs; first vice-president, Elmer T. Fischer; second

vice-president, Mell Reinig and secretary-treasurer, Helen B. E. Krueger.

#### Russell Named Phila. Quartz V.P.

Edwin A. Russell, director and sales manager of Philadelphia Quartz Co., manufacturers of silicates of soda, Philadelphia, was named vice-president in charge of sales, it was announced early last month. He joined the company in 1918, was appointed assistant sales manager in Jan., 1921, and sales manager in 1928. In addition he is director and sales manager of an associated company, American Doucil Co. Also advanced, according to the company announcement, was George J. Banse, who was named assistant treasurer and assistant secretary.

#### Ed Bush Has a Fourth Child

A daughter, Edith, was born to the wife of Ed Bush, of Bush Aromatics, Inc., New York, March 12. It is the Bushs' fourth child, of which three are girls and one is a boy.



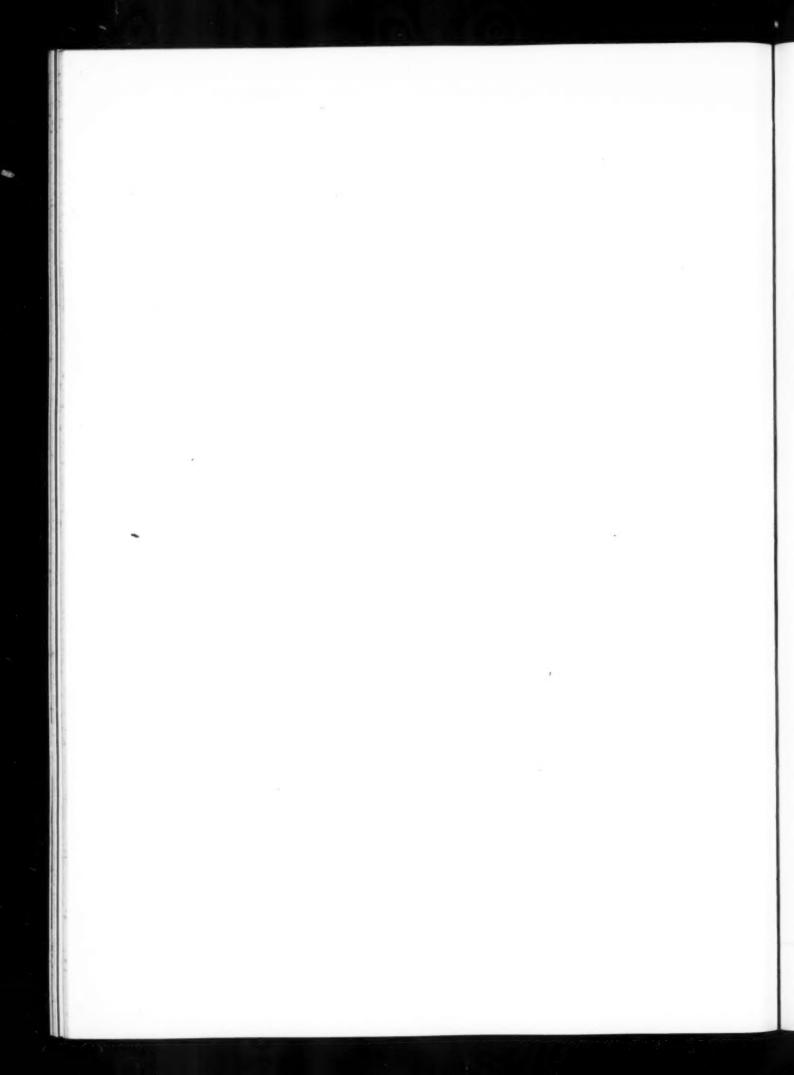
In this war, more than in any other war in history, victory depends on broad strategic planning. For huge land, sea and air forces must be distributed over vast areas and deployed into positions of tactical advantage from which decisive blows may be struck. This calls not only for military skill but for the specialized skills for which America is famous-technical ingenuity, mechanical ability and especially the application of "mass" methods to production, transportation, construction and the use of many technical sciences on a large volume scale. Indeed, America possesses that vital "Margin of Experience" in these activities which permits strategic planning on an unprecedented scale and has already established the framework for the final victory.

In every field of science, commerce and indus-

try, this "Margin of Experience" proves again and again to be a factor vital to success. Niagara offers it in the field of electro-chemical products. For Niagara has pioneered constantly in the development, improvement and adaptation to new uses of Liquid Chlorine, Caustic Potash, Caustic Soda, Carbonate of Potash and Paradichlorobenzene. Rely on Niagara's "Margin of Experience" for greater success in the use of these products.

AN ESSENTIAL PART OF AMERICA'S GREAT CHEMICAL ENTERPRISE







#### Hysan Buys New Building

Hysan Products Co., Chicago, have just announced the purchase of a new, fire-proof concrete building to replace their former plant, which was destroyed by fire in Dec. The new structure, at 932 W. 38th Place, affords over two and one-half times the capacity of the former plant. It is being equipped with new manufacturing equipment of advanced design that was not available prior to the war.

Already installed are two high pressure boilers of special design and 150 h.p. capacity for processing soaps and disinfectants. There are also two 41 ton refrigerator units for cooling liquid soaps and waxes. Manufacturing operations will be conducted on a production line basis. The printing department has been increased to five times its former capacity for more rapid service in supplying multi-color private labels.

#### Jersey City QM Soap Purchases

More than 625,000,000 pounds of soap were purchased by the Jersey City Quartermaster Depot in 1944, it was announced recently. Representing the total needs of the Army all over the world, this quantity also includes some special purchases for the Marine Corps. The importance of bath and laundry units from the standpoint of health and morale are understood by the Army, according to the release, which mentions the two million showers and clothing exchanges and nearly 111/2 million pounds of laundry work done for combat troops of the Fifth Army in Italy during the past year.

More than half the overall purchase made at the Jersey City Quartermaster Depot were yellow laundry soap, while the next largest category is wrapped toilet soaps of nationallyknown brands in commercial sizes. The latter, along with wrapped laundry soap in the 10-ounce size is resold through post-exchanges overseas to service men and women.

Among other types of soap purchased by the Army are the all-purpose soap, powdered and flake soaps for laundries, packaged granulated soaps for post exchange resale, detergents for use by mobile laundries, and dry cleaning laundry soaps.

#### Chas. Solly Operated On

Charles B. Solly of Harley Soap Co., Philadelphia, a well known figure in the potash soap industry, underwent an eye operation recently. Mr. Solly who has suffered from impaired vision for a number of years, reports that the operation gives promise of a considerable improvement in his sight. He expected to return to full time duty after a few weeks.

#### Manhattan Testing "Blu-White"

Manhattan Soap Co., New York, recently has been testing its advertising campaign on behalf of "Blu-White" in selected newspapers and radio stations in Milwaukee and Chicago before broadening the schedule.

#### Canada Soap Output Up in '43

An increase in the production of soap in Canada in 1943 was reported recently by the Dominion Bureau of Statistics. Production of soap in 1943 amounted to 237,024,000 pounds, compared with 233,841,000 pounds in 1942, an increase of 1.3 per cent. Dollar value of soap produced in 1943 declined somewhat below the 1942 figure. In 1943, \$25,289,000 worth of soap was produced, as against \$25,-632,000 in the previous year. Poundage figures for 1943 by kinds of soap include: 66,983,000 of hard laundry and household soap, 69,755,000 of soap powders, 44,644,000 of soap chips and flakes, 33,426,000 of toilet soap, 6,-342,000 of liquid soap and 4,412,000 of soft soap.

#### P&G Man Trade Mark Assn. V. P.

Among the officers elected recently by the United States Trade Mark Association was W. G. Werner, of Procter & Gamble Co., Cincinnati, as vice-president. G. S. McMillan, of Bristol-Myers Tobacco Co., New York, was elected to the board of directors. The Association was founded in 1878 and has among its objectives the dissemination of information on trade marks and protection of the trade mark system.

#### Urge Support For Fat Salvage

The National Sanitary Supply Association, Chicago, is urging its members to get behind the fat conservation campaign. "Our industry needs soap, soap powders, etc., to sell," says a recent bulletin to members. "The more waste fats we get in, the more chance we have that our supply of soap will continue to exist. We help the successful progress of the war and our own businesses at the same time. You should have posters up in your office and display rooms. Push the fat conservation program."



#### Synthetic floral oils . . .

PRESENT reduced supplies of natural floral essences emphasize the value of high quality substitutes. Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these Norda substitutes as an answer to the scarcity of natural floral oils.

## NORDA Essential Oil and Chemical Co., Inc.

Chicago Office 325 W. Huron St. Los Angeles Office 2800 E. 11th Street St. Paul Office 253 E. 4th St. Toronto Office 119 Adelaide St., W. New York Office 601 West 26th St. Montreal Office 135 Commissioners St., W.

#### Oil Trades Assn. Elects

K. L. Patterson, of Stanco Distributors, Inc., New York, was elected president of the Oil Trades Association at the annual meeting held at the Waldorf Astoria Hotel, New York, March 20. Other officers elected were: vice-president, J. L. Blakney, Colgate-Palmolive-Peet Co., Jersey City, N. J.; secretary, Joseph C. Smith, of Smith-Weihman Co., New York, and treasurer, J. S. Renick, of Renick & Mahoney, Inc., New York. About 400 members and guests attended the meeting, which was followed by a dinner and entertainment.

#### High Court to Hear Alkali Case

A review of the U. S. Department of Justice's anti-trust case against the United States Alkali and California Alkali Export Associations was tentatively granted early in March by the United States Supreme Court. The two associations, charged with "conspiracy" in restraint of interstate and foreign commerce in alkalis, asked a speed up of legal proceedings in order that their legal status might be cleared up so as not to interfere with plans for a revival of postwar international trade. For that reason an appeal was made direct to the Supreme Court. The high court has agreed to hear the parties to the case, but ordered them to justify the shortened procedure in arguments before the court.

#### Former Lever, Ltd. Rep. Dies

John Curtis, 77, a former sales representative of Lever Brothers, Ltd., Toronto, who had been with the company for 40 years before his retirement some years ago, died March 20, at St. Michael's Hospital, Toronto, after a brief illness. He was a past president of the Canadian Travellers' Association.

#### Detrex Corp. 25 Years Old

Detrex Corp., Detroit, is marking its 25th anniversary in a series of meetings with field sales staffs at various area headquarters, at which contemplated developments in the manufacture of Detrex products are discussed. The company, which makes

chemical cleaning compounds and industrial cleaning equipment, was founded Jan. 12, 1920. Starting operations in a small garage, the corporation now owns a plant with 120,000 sq. ft. of floor area in Detroit. Robert G. Emmett, president, recently announced appointment of A. O. Thalaker to the post of vice president and general manager, and E. O. Allison as the company's new secretary.



#### To Market "Soap Saver"

To conserve odds and ends of soap frequently thrown away because they are inconveniently small, a Chicago inventor has designed a unique gadget for the housewife which was recently placed on sale in hardware, grocery and other stores in that city. Known as a "Soap Saver," the cylindrically shaped device is made of perforated plate metal and fitted with a handle. Overall height is 7 inches and diameter 3 inches. To fill it the base is removed and it is operated by swishing it around in dish pan or tub. Perforations are so small that only the suds can get through. "Soap jelly" from chips, flakes and granules can also be used. R-System Co., 1010 N. Clark St., Chicago 11, Ill., are manufacturing the device. Retail price is 75 cents.

#### Anton Jurgens, 78, Dies

Anton Jurgens, 78, former chairman of the board of Lever Bros. and Unilever, Ltd., and one of the leaders of the world's soap and margarine industry, died March 12, at Torquay, England. Mr. Jurgens became the head of his father's butter factory in Oss, Holland, when he was 20, and by developing a new way of processing margarine, which was then in its infancy of development, he popularized the consumption of margarine and extended its production. In 1927, through a merger with the Van den Bergh firm, another well-known Dutch margarine and soap concern, Margarine Union of Van den Bergh and Jurgens, Inc., was founded, with Mr. Jurgens as president-director. Two years later, he played a prominent part in merging with the English firm of Lever Bros. and Unilever, of which he became president and director. He retired in 1933, and though he lived in England, he retained his Dutch citizenship.

#### Wm. E. Malone in New Post

William E. Malone, Jr., formerly assistant to the vice-president of the Kolynos division of American Home Products Corp., New York, has just been named advertising and sales promotion manager of the corporation's cosmetic unit, Affiliated Products, Inc. Mr. Malone was recently discharged from the Army.

#### Bristol-Myers' '44 Earnings Drop

Bristol-Myers Co., New York, and domestic and Canadian subsidiaries reported net earnings for 1944, after a \$5,952,063 provision for taxes and renegotiation of contracts, of \$2,439,546, or \$3.66 each on 667,250 capital shares, compared with a net of \$2,683,557 earned in 1943. For the fourth quarter of 1944 the company reported earnings of \$550,599, or 83 cents a share after \$1,296,450 provision for taxes and renegotiation.

#### Who Makes "Zip" Cleaner?

A subscriber to Soap and Sanitary Chemicals is interested in locating the name of the manufacturer of "Zip" waterless cleaner.



N the development of DDT, destroyer of the malaria-carrying mosquito and the typhus-bearing louse, scientists see a day when the earth will be forever rid of two scourges that have recurrently decimated populations since time immemorial.

Merck & Co., Inc., of Rahway, N. J., who manufacture it for the U. S. Navy, take the precaution to package this new wonder insecticide in Crown cans. For, despite the rigors of many handlings and widely varying climatic conditions incident to the thousands of miles this vital chemical must travel, Crown cans assure its complete protection... the retention of full strength... thus preserving the lethal qualities of DDT ready for lifesaving service in pestilence-endangered areas throughout the world.



CROWN CAN

CROWN CAN COMPANY - NEW YORK - PHILADELPHIA
Division of Crown Cork and Seal Company, Baltimore, Maryland

## BIDS AND AWARDS

#### Panama Canal Soap Awards

Wm. Messer Corp., New York, received the following awards for various types of soap in recent openings for miscellaneous supplies by Panama Canal, Washington, D. C.: laundry soap (unspecified quantity), \$1,890, Camden, N. J.; and another for \$3,132.80; on toilet soap, \$539.25, San Francisco; and scouring powder, \$280, Philadelphia.

#### Synthetic Soap Award

Allied Chemical & Dye Corp., New York, submitted the only bid on 612,360 pounds of synthetic soap in a recent opening for miscellaneous supplies by the U. S. Marine Corps, Washington, D. C.. The Allied bid of 13.5 cents a pound was accepted.

#### G.P.O. Liquid Soap Bids

In a recent opening for miscellaneous supplies by the U. S. Government Printing Office, Washington, D. C., the following bids were received on 4,400 gallons of liquid soap: Trio Chemical Works, Brooklyn, 33 cents; James Good, Philadelphia, 40 drums, 42.3 cents a gallon; Harley Soap Co., Philadelphia, 32.5 cents; Ampion Corp., Long Island City, N. Y., 38.95 cents; Eastern Chemical Co., Baltimore, 80 cents; R. M. Hollingshead Corp., Camden, N. J., 34 cents; Penetone Co., Tenafly, N. J., 35 cents; and Fort Washington Chemical Co., Fort Washington, Pa., 34.42 cents.

#### District Insecticide Award

Sinclair Refining Co., New York, received the award on an unspecified quantity of insecticide with a low bid of 46.5 cents in a recent opening for miscellaneous supplies by the District Government, Washington, D. C. The other bidders and their bids included: Deco Products Co., New York, 97 cents; Crystal Soap & Chemical Co., Philadelphia, 82 cents; Gulf Oil Corp., Philadelphia, 68 cents; Lanair Chemical Corp., Chicago, \$1.56; Huntington Labs., Huntington, Ind., 85 cents; Capitol Chemical Co.,

Washington, 52 cents; Brilco Labs., Brooklyn, 61 cents; West Disinfecting Co., Long Island City, N. Y., 67.5 cents; and H. J. Barrett Co., Baltimore, 60 cents.

#### Treasury Sanitary Supply Bids

The following bids were an nounced in recent opening for miscellaneous supplies by the Procurement Division of the Treasury Department, Washington, D. C.: 1,350 pounds of napthalene; B. R. Elk & Co., Garfield, N. J., 10.5 cents a pound; Reilly Tar & Chemical Corp., New York, 9.24 cents per pound; Unity Sanitary Supply Co., New York, 16 cents a pound; 300 gallons of metal polish; R. M. Hollingshead Corp., Camden, N. J., 79 cents a gallon; Fuld Bros., Baltimore, 55 cents a gallon; Solarine Co., Baltimore, 55 cents a gallon; Unity Sanitary Supply Co., New York, 85 cents a gallon; 500 gallons of disinfectant; Jame-Huggins & Son, Malden, Mass., 65 cents a gallon; Koppers Co., White Tar Division, Kearny, N. J., 90 cents; West Disinfecting Co., Long Island City, N. Y., \$1.49; and 804 gallons of disinfectant; James Huggins & Son, Malden, Mass., 68 cents a gallon; Koppers Co., White Tar Division, Kearny, N. J., 95 cents a gallon; and West Disinfecting Co., Long Island City, N. Y., \$1.47 a gallon.

#### WFA Soap Purchases

The following soap bids were accepted in recent openings for miscellaneous supplies by the Office of Distribution, War Food Administration, Washington, D. C.: Standard Soap Co. of Camden, N. J., 400,000 pounds of laundry soap, 6.25 cents a pound; J. B. Williams Co., Glastonbury, Conn., 129,300 pounds of shaving sticks, 97 cents a pound and 337,-500 shaving sticks, \$1.41032; U. S. Soap Mfg. Co., Philadelphia, 1,500,000 pounds of Young's blu-mottle, 8.5 cents a pound; John T. Stanley Co., New York, 320,000 pounds of laundry soap, blue mottled, 7 cents and 432,000 pounds of laundry soap, blue

streaked, 6.8 cents; Colgate-Palmolive-Peet Co., Jersey City, N. J., 33,750 pounds of toilet soap, 17.32 cents and 1,250,000 pounds of laundry soap, blue streaked, 6.39 cents; William A. Woodbury, New York, 45,000 pounds of shaving cream, 96 cents and 36,700 pounds of shaving cream, at 64 cents; Allen B. Wrisley Co., Chicago, 315,000 pounds of green milled toilet soap, 16.6 cents; and J. Eavenson & Sons, Camden, N. J., 146,884 pounds of toilet soap, 18.99 cents, 146,884 pounds of pine scented toilet soap, 21.962 cents and 100,000 pounds of pine toilet soap, 21.559 cents.

#### WFA Soap Award to L. Schultz

In a recent opening for miscellaneous supplies by the Office of Distribution, of the War Food Administration, Washington, D. C., Lightfoot Schultz Co., New York, entered a bid of 25.8729 cents a pound on 126,000 pounds of soap and soap products, which was accepted.

#### Navy Scouring Compound Award

Safford Co., Burnsville, N. C., received the award on 130, 900 pounds of scouring compound with a bid of 3.6 cents a pound in a recent opening for miscellaneous supplies by the Bureau of Supplies and Accounts, U. S. Navy Dept., Washington, D. C.

#### Phila. Navy Wax Award, Bids

Oil Specialties & Refining Co., Brooklyn, with a bid of \$609 on 1,000 gallons of transparent wax, received the award in a recent opening for miscellaneoous supplies by the Philadelphia Navy Yard, Philadelphia. Other bidders included: Fuld Bros., Baltimore, 60 cents; R. M. Hollingshead Corp., Camden, N. J., 69 cents, with an alternate bid of 64 cents; Lasting Products, Baltimore, \$1.22; Puritan Chemical Co., Atlanta, \$1.325; and Windsor Wax Co., Hoboken, N. J., 67.4 cents.

#### Coty Head Aids Fund Raising

Herman L. Brooks, president of City, Inc., New York, has been appointed chairman of the Cosmetics Division of the committee for the Legal Aid Society 1945 Appeal.

## American Made by

## GEORGE LUEDERS & CO.

OIL OF

CLOVE OLIBANUM CARDAMOM OPOPONAX CELERY STYRAX

RESINS

BALSAM PERU BALSAM TOLU LABDANUM OLIBANUM OPOPONAX STYRAX

"... in our factory"

427-29 WASHINGTON ST.

**NEW YORK** 

BRANCHES

CHICAGO

SAN FRANCISCO MEXICO CITY MONTREAL

Representatives—ST. LOUIS • PHILADELPHIA • LOS ANGELES • TORONTO

## RADE MARKS

The following trade-marks were published in the March issues of the Official Gazette of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

#### Trade Mark Applications

LUMIGHT—This in upper and lower case, bold script letters for household cleanser. Filed Aug. 17, 1943 by Umberto Plebani, Larchmont, N. Y. Claims use since Aug. 5, 1943.

EMULSEPT—This in upper case, bold letters for bactericidal detergents. Filed Oct. 4, 1944 by The Emulsol Corp., Chicago. Claims use since Sept. 4, 1941.

LIX-RUST—This in upper and lower case, extra bold, black letters for polish and metal, etc., preserver. Filed Oct. 12, 1944 by Strausser Laboratories, Akron, O. Claims use since Apr. 10, 1940.

ZEE ZEE—This in upper case, extra bold letters within a light rule rectangle for cleansing cream for cleaning and removing oil, grime and grease. Filed Nov. 3, 1944 by Martin J. Traub, New York. Claims use since May 10, 1944.

Coloiso—This in upper case, extra bold, black letters for liquid soap, not including shampoo. Filed Nov. 9, 1944 by Gould & Poehlman Co., South Bend, Ind. Claims use since Oct. 26, 1944.

Bonus — This in upper case, extra bold, black letters for soap. Filed Nov. 11, 1944 by Procter & Gamble Co., Cincinnati. Claims use since Oct. 9, 1944.

VARVACIOUS — This in upper case, bold letters for hand soap. Filed Dec. 6, 1944 by House of Tre-Jur, Inc., New York. Claims use since Nov. 27, 1944.

PHILCO—This in upper case, extra bold letters for furniture polish.

Filed Aug. 9, 1944 by Philco Corporation, Philadelphia. Claims use since 1934.

DAZZLE — This in upper case, extra bold letters for liquid and paste floor, automobile, furniture, etc., polishing waxes. Filed Nov. 16, 1944 by J. L. Prescott Co., Passaic, N. J. Claims use since Oct. 25, 1944.

VALSE DE FLEURS—This in upper and lower case script letters for soap. Filed Nov. 18, 1944 by Ceda Distributing Co., New York. Claims use since Sept. 15, 1940.

AKO—This in extra bold, black, upper case letters, one above the other, for chemical preparation for destroying kitchen odors. Filed Oct. 30. 1944 by A-K-O Co., Elizabeth, N. J. Claims use since Jan., 1944.

MOLASTIK—This in upper case, bold, stencil letters for vehicle for insecticides. Filed Nov. 4, 1944 by U. S. Industrial Chemicals, Inc., New York. Claims use since Oct. 18, 1944.

MILDOOM—This in upper case, bold letters for preparation to be added to paints to prevent the growth of mildew. Filed Nov. 9, 1944 by Sapolin Co., New York. Claims use since Oct. 31, 1944.

FOAMICIDE—This in upper case, extra bold letters for chemical powder to be added to foaming liquids present in bottle and container washing processes to prevent and depress the formation of foam. Filed Nov. 11, 1944 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Apr. 21, 1944.

SWEETHEART NOVIA — This in upper case, bold letters for toilet soap. Filed Nov. 27, 1944 by Manhattan Soap Co., New York. Claims use since May 11, 1903.

LITTLE LADY — This in upper and lower case, script letters in an arc for toilet soap. Filed Dec. 9, 1944 by Helena Pessl, Inc., New York. Claims use since Oct. 6, 1944.

DESENEX—This in upper case, bold, black letters for fungicidal composition for therapeutic use. Filed July 15, 1944 by Wallace & Tiernan Products, Inc., Belleville, N. J. Claims use since June 20, 1944.

CATMETICS—This in upper case, extra bold letters for shampoo, bubble bath, insect powder, deodorants, etc., for cats. Filed Nov. 22, 1944 by Kinghill Laboratories, New York. Claims use since Oct. 31, 1944.

DOGMETICS — This in upper case, extra bold letters for shampoo, bubble bath, insect powder, deodorants, etc., for dogs. Filed Nov. 22, 1944 by Kinghill Laboratories, New York. Claims use since Oct. 31, 1944.

RAT-Not—This in upper case, extra bold, black letters for raticide. Filed Nov. 29, 1944 by Nott Manufacturing Co., New Rochelle, New York. Claims use since Jan. 10, 1938.

RAYVE — This in lower case, open, script letters for shampoo. Filed Dec. 16, 1944 by Raymond Laboratories, Inc., St. Paul. Claims use since Aug. 18, 1944.

MANITO BY LYNETTE NEW YORK—This in upper case, bold and regular letters for shampoos, tooth pastes, tooth powders, etc. Filed June 26, 1943 by Lynette, N. Y. Claims use since Mar. 27, 1943.

SHIMMER-OL — This in upper case, extra bold letters for shampoo. Filed Mar. 1, 1944 by Shimmer-Ol Co., Bridgeport, Conn. Claims use since Feb. 9, 1944.

Dow-Frost — This in upper case, bold letters for herbicide. Filed Apr. 10, 1944 by Dow Chemical Co., Midland, Mich. Claims use since Dec. 13, 1943.

LOWILA — This in upper case, extra bold, black letters for skin protective cream. Filed July 27, 1944 by Westwood Pharmacal Corp., Buffalo. Claims use since May 1, 1943.

Musicop—This in upper case bold and reverse letters, the upper half being reverse on a black rectangular tint block for liquid antiseptic. Filed Aug. 22, 1944 by Musicod, San Antonio. Claims use since Jan. 29, 1943.

IVORY—This in upper and lower case, bold letters for toothpaste. Filed Oct. 16, 1944 by Procter & Gamble Co., Cincinnati, O. Claims use since May 11, 1944.

Exalgae—This in upper case, extra bold, black letters for algaecidal

#### Pour in the right PQ silicate detergent

... and add to your compound at low cost, more valuable qualities such as quick-wetting action, thorough emulsifying power and the very special function, preventing redeposition of the removed dirt on the clean object.

Translated into customer benefits, the property of preventing redeposition of dirt results in better whiteness retention in laundering, and absence of greasy film in the cleaning of metal or glass surfaces.

PQ Silicates are available in liquid or powder grades. The current edition

of our general catalog lists 50 brands. A few of the most important for detergent purposes are:

G BRAND (Na<sub>2</sub>0.3.22 SiO<sub>2</sub>) Hydrated sodium silicate. Fine, soft, white powder, rapidly soluble.

GC (Na<sub>2</sub>0.2SiO<sub>2</sub>) Powdered sodium silicate. Hydrated, alkaline, more quickly soluble than "G".

SS-C-PWD. (Na<sub>2</sub>0.2Si0<sub>2</sub>) Anhydrous powdered sodium silicate, slowly soluble. Ground to pass 65 mesh.

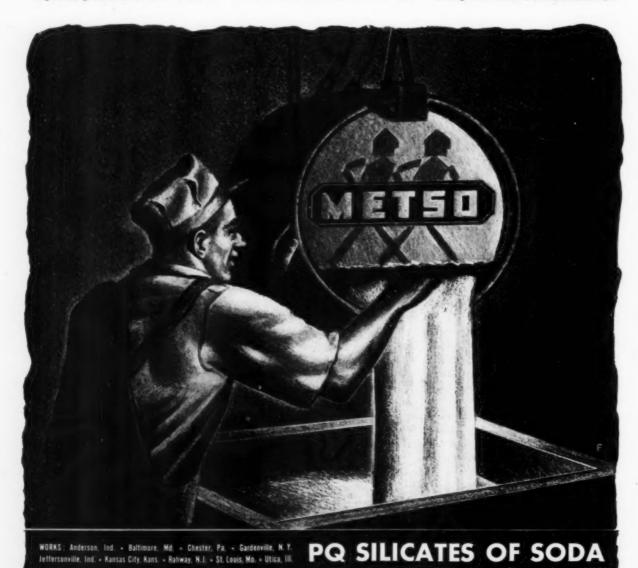
METSO GRANULAR (Na2SiO3 . 5H2O)

Original sodium metasilicate (U.S.Pat. 1898707). Free flowing, white granular product.

METSO 99 (Na<sub>3</sub>HSiO<sub>4</sub> • 5H<sub>2</sub>O) Sodium sesquisilicate (U. S. Pat. 1948730, 2145749). White, granular and free flowing.

Which brand interests you? Consult us for more information and ask for samples. You're welcome.

PHILADELPHIA QUARTZ CO.
Dept. B, 129 South Third Street, Phila 6, Pa.
Chicago Sales Office: 205 West Wacker Drive



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product. Filed Oct. 18, 1944 by Inertol Co., Newark, N. J. Claims use since Aug. 17, 1944.

KENBRIC—This in upper case, extra bold, black letters for soot remover. Filed Oct. 27, 1944 by Kenite Laboratory, Inc., New York. Claims use since Dec. 18, 1939.

Loreene Johnston—This in upper and lower case script letters for shampoo. Filed Oct. 28, 1944 by Loreene Johnston, Cleveland, O. Claims use since Apr. 25, 1940.

SHUR-WAY—This in upper case, extra bold, black letters for insect spray and roach powder. Filed Nov. 9, 1944 by Shur-Way Exterminators, Scranton, Pa. Claims use since June 29, 1934.

ROYAL OAK—This in upper and lower case, bold letters for bath, hand and shaving soap and shaving cream. Filed Mar. 1, 1944 by Lightfoot Schultz Co., New York. Claims use since Jan. 26, 1942.

JA-RO — This in upper and lower case, extra bold letters for liquid cleaning composition for plastics, jewelry, glass, metal, etc. Filed May 18, 1944 by U. S. Detergents Co., New York. Claims use since Mar. 1, 1943.

BURLITE—This in upper case, extra bold, black letters for general household cleaning compound. Filed Aug. 24, 1944 by Bauer Manufacturing Co., Wooster, O. Claims use since Apr. 1, 1944.

VALVO — This in upper case, very bold, black letters for all-purpose, powdered, household washing compound. Filed Sept. 25, 1944 by Koch Chemical Co., Winona, Minn. Claims use since Aug. 1, 1944.

BALALAIKA—This in upper case, bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Oct. 30, 1941.

IMPROMPTU — This in upper case, extra bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Nov. 28, 1944.

INDISCRETE—This in upper case, bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Nov. 29, 1938.

JABOT — This in upper case, extra bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Oct. 26, 1943.

Mon IMAGE — This in upper case extra bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Nov. 30, 1938.

OPENING NIGHT—This in upper case, bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Nov. 27, 1939.

STROCCO — This in upper case, extra bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Sept. 28, 1942.

TAILSPIN—This in upper case, bold letters for soap. Filed Nov. 7, 1944 by Lucien Lelong, Inc., Chicago. Claims use since Oct. 29, 1943.

AERO CLUB—This in upper and lower case, bold, script letters for toilet and bath soap, shaving soap and cream. Filed Nov. 18, 1944 by Cecile S. Leduc, Rochester, N. Y. Claims use since Oct. 1, 1940.

STARKIST—This in upper case, extra bold, black letters for brush and lather shave cream. Filed Dec. 4, 1944 by The Starkist Co., San Antonio, Tex. Claims use since Aug. 10, 1936.

Don Juan—This in upper and lower case letters for soap. Filed Dec. 6, 1944 by Don Juan, Inc., New York. Glaims use since Nov. 1, 1944.

KINGS MEN—This in upper case bold letters for brushless, lather shave cream, shaving and hand soap. Filed Dec. 18, 1944 by Windsor House, Ltd., Los Angeles. Claims use since Mar. 1, 1944.

MIR—This in upper case, extra bold, black letters for liquid glass, etc., woodwork cleaning preparation. Filed Dec. 18, 1944 by Mir Products, Chicago. Claims use since Nov. 25, 1944.

WOOL SOAP—This in upper and lower case, bold letters for toilet and bath soaps in flake form. Filed Dec. 19, 1944 by Swift and Co., Chicago. Claims use since Aug., 1894.

PENAMILIN — This in upper case, bold letters for antiseptic and germicide. Filed Oct. 3, 1944 by Schering Corp., Bloomfield, N. J. Claims use since Sept. 13, 1944.

Invasion Brand—This in upper case, extra bold letters above and below the fanciful drawing of a man operating a spray gun for insect spray, moth crystals, insecticides, deodorants and disinfectants. Filed Oct. 3, 1944 by Snow Chemical Co., Portland, Ore. Claims use since Aug. 18, 1944.

STUN—This in upper case, reverse letters on an oblate spheroid solid tint block for insect repellants. Filed Nov. 10, 1944 by Stun Products, New York. Claims use since Aug. 31, 1944.

PRAZE — This in upper case, extra bold, black letters for bubble bath, shampoo, etc. Filed Jan. 27, 1945 by Praze Products, Washington, D. C. Claims use since Jan. 27, 1945.

#### Trade Marks Granted

409,968. Furniture and floor polish. Filed by Chalette, New York, May 27, 1944. Serial No. 470,871. Published Aug. 15, 1944. Class 6.

410,880. Paste silver polish; enamel, tile, wall and window cleaners, etc., in liquid and powdered form. Filed by Norma Chemical Co., Mt. Vernon, N. Y., Jan. 1, 1943. Serial No. 457,705. Published June 1, 1943. Class 4.

410,883. Alkaline cleansing compound in powdered form for use in cleaning milk cans, etc. Filed by Diversey Corp., Chicago, July 24, 1943. Serial No. 462,278. Published Oct. 3, 1944. Class 4.

410,899. Antiseptic and disinfectant preparation. Filed by Lehn & Fink Products Corp., Bloomfield, N. J., Mar. 8, 1944. Serial No. 468,081. Published Oct. 10, 1944. Class 6.

410,916. Clothing cleaner. Filed by Gob Sales Co., Spokane, Wash., May 24, 1944. Serial No. 470,592. Published Oct. 3, 1944. Class 4.

410,930. Waxes for polishing automobiles, floors, furniture, etc. Filed by Fuld Bros., Baltimore, July 1, 1944. Serial No. 471,871. Published Oct. 3, 1944. Class 16.

410,941. Compounds for mildew-proofing. Filed by General Dyestuff Corp., New York, July 17, 1944. Serial No. 472,322. Published Oct. 10, 1944. Class 6.

410,951. Cleaning compound. Filed by Berry Chemical & Mfg. Co., Chicago, Aug. 4, 1944. Serial No. 472,-951. Published Oct. 3, 1944. Class 4.

410,953. All-purpose household cleaner. Filed by Resistal, Inc., Chi-

# Persume Specialties

AUNDERING and scouring soaps - the soaps that are used to keep things spick and span in the home-present an odorizing problem far different from that of the finely scented toilet soap. Theirs is a special problem, influenced not only by the physical character of the finished soap, but by the character of materials used in its composition and by the costs and conditions it will have to meet ultimately in its particular market. By virtue of long, successful experience in this field, our laboratories are fully prepared to render competent, helpful assistance to manufacturers in the selection or creation of odor effects that will add to the salability of their products without disturbing their costs. May we suggest that you write, 'phone or call on us for preliminary consultation?

LAUNDRY SOAPS

SOAP CHIPS and POWDER

PUMICE and HAND SOAPS

SCOURING POWDER

COLD SOAPS, Etc.

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BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F. A C. T. O. R. I. S. A. N. D. S. B. I. L. L. A. N. S. C. R. F. R. A. N. C. B. C. R. C. R. F. R. A. N. C. R. C. R.

cago, Aug. 7, 1944. Serial No. 473,037. Published Oct. 10, 1944. Class 4.

411,032. Liquid floor wax. Filed by Acme Chemical Co., Milwaukee, Mar. 31, 1944. Serial No. 468,862. Published Oct. 24, 1944. Class 16.

411,043. Cleaning compound. Filed by Diversey Corp., Chicago, Apr. 17, 1944. Serial No. 469,387. Published Oct. 17, 1944. Class 4.

411,054. Liquid cleanser for upholstery and other textiles. Filed by Diamond Chemical Co., San Francisco, June 12, 1944. Serial No. 471,-154. Published Oct. 24, 1944. Class 4.

411,068. Preparation to remove grease and oil from floors. Filed by Gray Co., Minneapolis, June 9, 1944. Serial No. 471,080. Published Oct. 17, 1944. Class 4.

411,069. Laundry and dry cleaning soaps and compounds. Filed by Nu-Pro Manufacturing Co., St. Louis, June 10, 1944. Serial No. 471,129. Published Oct. 17, 1944. Class 4.

411,078. All purpose cleaning and polishing compound. Filed by J. Q. A. Martin, New Bern, N. C., June 22, 1944. Serial No. 471,531. Published Oct. 24, 1944. Class 4.

411,081. Powdered soap. Filed by Pure Tallow and Soap Co., St. Paul, June 24, 1944. Serial No. 471,-625. Published Oct. 24, 1944. Class 4.

#### Bjorksten Now a Consultant

Dr. Johan Bjorksten, formerly chemical director of Quaker Chemical Products Corp., Conshohocken, Pa., has just announced the establishment of his own independent industrial research organization, Bjorksten Laboratories, at 185 No. Wabash Ave., Chicago 1.

#### Van Writes for Executives

The February issue of Executives, a service bulletin published in the interest of management by the Metropolitan Life Insurance Co., New York, carries an article, "Showmanship in Human Relations" by Billy B. Van, of the Human Relations Division, Fellows Gear Shaper Co., Springfield, Vt. Soap makers will remember Mr. Van as the former operator of Pine Tree Products Co., Newport, N. H., makers of "Pine Tree" soap.



GEORGE C. O'BRIEN

#### G. C. O'Brien, Hercules, Retires

George C. O'Brien, manager of the Naval Stores department New York office of Hercules Powder Co., Wilmington, has retired after 50 years of service, it was announced March 31. He is to be succeeded by Herbert M. Wendle, of the Wilmington office, who has been a sales supervisor of Naval Stores products since 1939, and who joined Hercules following his graduation from Bucknell College in 1930.



HERBERT M. WENDLE

Mr. O'Brien, who was identified with Laflin and Rand Powder Co. and E. I. du Pont de Nemours & Co., prior to joining Hercules, was born in Brooklyn, in 1882. From 1913 to 1918 he was with Hercules' explosive department and in 1918 was named manager of the chemical sales division. In 1923 he became identified with the Naval Stores department and served in various capacities until appointment as manager of the New York office in 1939.

#### Form Noville Essential Oil Co.

A. G. Nickstadt, president of Noville Products Co., New York, has announced that Alfred H. Moeller has joined him as partner to form the Noville Essential Oil Co. with offices at 40 Stone St., New York. The new firm will import and produce essential oils, aromatic chemicals and specialties. Noville Products Co., which has been active chiefly in foreign markets for the sale of American perfume materials, will be affiliated with the new partnership. Mr. Moeller has been actively engaged in the essential oil and aromatic chemical business for 18 years, during the last 14 of which he was associated with the Aromatics Division of E. I. du Pont de Nemours & Co.

#### Hochstadter Now a Consultant

Dr. Irving Hochstadter, for about the last year, research director of Gallowhur & Co., New York, recently left that organization to set up his own chemical engineering consulting service at 52 Vanderbilt Ave., New York. Dr. Hochstadter is the former head of Hochstadter Laboratories, Inc., New York, and of Still & Van Siclen, Inc. He has done consultant work for the soap and detergent industry, and was consultant to the glue and gelatine industry.

#### Stand. Synthetics Expands Territory

New territory in the Iowa and Indiana trade areas will be covered by Edward Sinclair, manager of the company's Chicago office and Ralph Crow, sales manager, it was announced recently by Standard Synthetics, Inc., New York.

#### P&G Plant Exceeds Bond Quota

A novel method of stimulating bond sales was tried at the St. Louis plant of Procter & Gamble Co. during the recent 6th War Loan drive. Every employee who purchased a \$50 war bond was entitled to blow the factory whistle. Extra bond sales averaged more than \$50 per person, in addition to regular payroll deductions and the factory's quota was over subscribed by 10 per cent.



a tip from cosmetics

for men using pigment binders, and film forming agents

Need a pigment binder in your product? Or a film forming agent? Then it may profit you to eavesdrop on an experience of the cosmetic industry. When silk stockings became an early war casualty, ladies demanded leg make-up preparations. But specifications laid down by the feminine sex were pretty tough—leg make-up must stay on and not wear off in spots, must be free of odor, harmless to the skin, uniform and stable in color, sufficiently viscous to prevent running before drying, be unaffected by perspiration—truly an imposing list of requirements.

Cosmetic executives consulted with Dow research technicians and numerous experiments followed. The final answer was Methocel. Why? Because this water soluble Dow cellulose ether, an excellent pigment binder, holds the color fast to the leg. It also acts as a film forming agent on the skin producing proper luster and opacity. It is odorless, viscous, harmless to skin, exceptionally uniform, reduces pigment settling in the bottle—all in all a perfect solution for a perplexing problem.

The same sterling qualities of Methocel may help improve your product. We'll be glad to send more information.

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## Methocel

Water Soluble Dow Methylcellulose



#### MARKETS RAW MATERIAL

As of Mar. 29, 1945

PRELIMINARY estimates now indicate that domestic disappearance of fat and oil products in 1944 was over 10.3 billion pounds (in terms of fat content), about 400 million pounds more than in 1943. The major factor in this increase was expanded production of soap for the military, with some increase for civilians. If exports, including military shipments for relief, continue large in 1945, domestic disappearance of all fats and oils probably will be reduced 5 to 10 per cent this year because of the smaller total supply of fats available.

Lard, the fat that is making the big difference between last year's and this year's stocks of fats and oils, is again reported to be growing shorter. As a result, from Chicago comes word that open-market trading is practically

non-existent, with packers having a hard time trying to take care of their retail trade through branch houses. Stocks of lard in cold storage are said to be near the vanishing point. Holdings in Chicago, early in the month, were reported to be about 5,141,000 pounds, which brokers believe is way below working stock. Supplies decreased 4,883,000 pounds in February, whereas a year ago they amounted to 64,294,000 pounds. As might be expected, shipment of hogs to market is far below last year. From the first of the year until Mar. 1, receipts in twenty leading markets showed about a 50 per cent decline below last year's figures for the same period. Receipts for the week ending Mar. 3 amounted to 283,000 lbs. which was 478,000 lbs. less than a year ago, the smallest in more than four years. Nor, say

packers, is there reason to hope for any improvement in the situation in the near future.

Inedible tallow and greases will be in tighter supply during 1945, for the two obvious reasons of declining production and expanding military requirements. In 1944, factory consumption of inedible tallow and greases reached a high level. In one quarter, Oct.-Dec., 1944 consumption was 494 million pounds, the highest quarterly rate on record. Ceiling prices on tallow and greases will remain unchanged. That, at least, is what the Office of Price Administration officials told members of the newly organized Inedible Animal Fat Producers Industry Advisory Committee, which met recently in Washington. The new committee, which represents approximately 300 producers is headed by Arthur M.

for perfuming

Soaps, Shaving Creams and Shampoos use

a sample is ready for you



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NEW YORK DETROIT LOS ANGELES

Executive Offices and Laboratories CROTON-ON-HUDSON, N. Y.

> COMPAGNIE PARENTO, LTD. TORONTO, ONT. CANADA

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She will—if it has the advantage of FLORASYNTH aromatic appeal... It is this vital "please"... created by distinctively faithful reproductions of the true floral odors... that permeates and distinguishes your products from all others.. Florasynth

#### JASMIN

is one of a wide variety of SOAPAROMES that will add this vital "please" factor to your products . . .

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Florasynth Laberaturies de Mexico S. A. — Mexico City

Hayes, president of Van Iderstein Co., New York, who was elected chairman.

In response to a request by the Office of Price Administration, the State Department during the month just passed denied reports circulated in Brazil that the OPA was planning to increase maximum prices importers could pay for carnauba wax. The move was expected to stimulate trade which had come to a standstill, since South American exporters were not offering goods until the rumored price advances were announced.

Price increases for "Solros" and limed rosin were announced during March by the O.P.A., in what was said to be a move to encourage production of these two commodities. The increases were covered by Amendment 2 to Supplementary Regulation 14F to GMPR.

A price reduction on "Isophorone," a high-boiling solvent, was announced during the month by Carbide and Carbon Chemicals Corp., New York.

The shortage of carbon tetrachloride requires closer control on its distribu-

tion, suppliers were told by the War Production Board on Mar. 19. Now, suppliers will be required to list on their consumption reports the names of customers ordering more than 3,500 pounds a month. Before this amendment, suppliers were requested to list only persons ordering more than 7,000 pounds of the fluid a month. The amendment further requires suppliers to file a quarterly report of stocks and consumption so that an actual check of customers' inventories and uses can be made. Anyone ordering 21,000 pounds or more of carbon tetrachloride for delivery during the first quarter of 1945, or 10,500 pounds or more for delivery during any subsequent quarter must file with the WPB a stock and consumption report on form WPB-3442.

War Production Board officials told members of the Rotenone Industry Advisory Committee at their recent meeting in Washington that supplies of rotenone for the current crop year (Oct. 1944-Sept. 1945) would be approximately the same as for the previous year. Shipping facilities to bring the unprocessed rotenone from South

America still constitute a problem, the WPB officials pointed out. However, supplies of rotenone for essential commercial, farm, home and victory garden insecticide requirements are expected to be available, they indicated.

The essential oil outlook is far from encouraging. Efforts on the part of the government to purchase essential oils in France have not been marked by any noticeable degree of success. What stocks of oil there are in France are reported as rather slim. In addition, no great floral crop is expected for this year, and even if a larger crop were in prospect, the lack of transportation, solvents with which to extract perfuming oils and containers would cripple essential oil production. The overall picture in the United States is darkened not only by poor importing prospects for the next year, at least, but also by fast dwindling stocks. Since the United States has received little or no imports of essential oils in the past three or four years from France, the possibility of stocks of certain perfuming materials being completely used up is very real.





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# PRODUCTION SECTION

# Rug and Carpet Cleaners

HE average carpet or rug is composed of a woven backing containing cotton, jute, linen or similar vegetable fibers, and a pile surface composed of woolen or hair fibers. The surface animal fibers are dyed with acid wool dyestuffs, and the backing fabric with direct or sulfide colors. Street dust in some districts is slightly alkaline and long contact with it tends to make the acid dyestuffs lose their freshness. It is surprising how the shades recover when such a fabric is lightly washed with a weak solution of acetic acid or vinegar. The acid may be left in the carpet without detriment.

Stain-removing compositions for carpets may be divided into aqueous and nonaqueous types. Carbon tetrachloride and trichloroethylene are examples of the latter; these remove grease or dirt when the dirt is associated with grease. Trichloroethylene is valuable for removing tar and grass stains. A British patent has appeared covering the addition of butyl or benzyl alcohol to an organic cleaning fluid. The alcohol is to prevent the fibers from acquiring an unnatural gray appearance after celaning.

For home cleaning, mixtures of alkaline salts with soap and a small proportion of paradichlorobenzene are often packaged and sold in the dry state. It should be noted that alkaline cleaning agents would leave the fabric alkaline after treatment unless the carpet is also thoroughly washed. Wool fibers absorb alkaline washing agents even after washing, a fact frequently ignored by compilers of carpet-cleaning soaps. Experiments on washing wool with a number of detergents showed that soap washing left the

greatest residue, while far less residue remained after washing with a sulfated fatty alcohol. A film of soap left on the carpet will tend to pick up dirt, so that it becomes resoiled rather quickly.

Street dust may contain lime, and washing with a synthetic detergent has the advantage that no insoluble calcium soaps will be formed. An afterwash with weak acid is not very satisfactory if ordinary soap has been used for cleansing because then free fatty acid may be liberated on the carpet. The abundant lather given by most synthetic detergents also gives visual satisfaction to the user.

In British Patent No. 456,727, a carpet-cleaning composition contains the sodium or ammonium salt of sulfonated oleic acid. A paste is made by adding gelatin and concentrating the solution. If desired, ammonia, acetone, alcohol and a perfume may also be added, and a proportion of colloidal clay to promote frictional cleansing.

British Patent No. 526,647 describes a method of carpet cleaning primarily intended for laundry or factory use, but the chemicals employed may be of interest. A mixture is first made of 25 parts by weight of stable calcium hypochlorite containing 74 per cent of available chlorine, 37 parts of soda ash, and 37 parts of sodium bicarbonate. A liquid is prepared by dissolving 1 pound of this mixture with an equal weight of sulfated fatty alcohol in 50 gallons of water at 72° F. The mixture is stirred and after the precipitated carbonate of lime has settled the clear solution is run off and fed to the carpet-cleaning machinery. The carpet or rug is first beaten and laid on its face and the back brushed with the solution described. It is rinsed with water and turned face up and the brushing with solution repeated. The cappet is then put through a ringer to remove excess liquor.

Sodium naphthenate is a promising ingredient for carpet cleaners. In addition to detergent properties it has disinfecting power and a high gelation capacity, lending itself to the formation of jellies and tablets.

Special preparations for removing stains are also used in restoring carpets. A mixture of potassium acid oxalate, common salt and citric acid has been patented as an aid in removing ink and rust stains. Copying-ink stains are removed by applying a preparation comprising isopropyl alcohol, citric acid and the sodium salt of coconut fatty-acid sarcoside. The last compound is an amide detergent of the Igepon class. A. M. Preston. Manufacturing Chemist 16, 25-6 (1945).

The soap industry in Canada is the largest individual consumer of fatty oils, using over 140 million pounds per year, of which about 60 per cent is animal fats. Fish oils and vegetable oils and miscellaneous foots comprise the other major fatty raw materials. The industry has been fortunate in being able to maintain production at the level of 100 per cent of the mean of the years 1940-1941. It has been obliged to conserve the lauric acid fats, but there has been a fairly constant supply of inedible tallows and greases made possible by dint of government intervention. The use of rosin is not quite so general in Canada as it is in the United States, the reason being the high cost. For example, Nancy-grade gum rosin costs

# For Peak Efficiency in SOAP PRODUCTION...



Actual production records prove that the Proctor Flake Soap System truly provides the peak in soap producing efficiency.

Take the flakes produced by the Proctor system, for example. Any sample of flakes could be picked at random from any one of the many Proctor machines in operation and you would find those flakes to be as nearly perfect as it is possible to produce. You would find the flakes to be of unvarying thickness and uniformly dried. You know what an important factor that is in subsequent processing and in the ultimate quality of finished soap! You could time the

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If you aren't already thoroughly acquainted with the advantages of the Proctor Flake Soap System, you owe it to yourself to investigate without further delay. Write today !

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over 8 cents a pound in Canada as compared with  $7\frac{1}{2}$  cents per pound for No. 2 tallow.

An important new outlet for soap is the synthetic rubber industry which requires several million pounds of tallow chip soap in butadiene manufacture. The use of tall oil for soap manufacture has not achieved much acceptance. Two reasons are that the refined product is too high in price, and that the lower priced crude product is too dark and odoriferous to be acceptable. F. H. Lehberg. Oil & Soap 22, 46-50 (1945).

# Waxy Compounds

Polyglycol ethers of secondary alcohols form waxy compounds of high wetting and detergent power but with low foaming ability. A mixture of caproic, enanthic, caprylic and pelargonic acids, produced by the oxidation of a straight-chain paraffin, is ketonized to form a mixture of aliphatic ketones with a chain length of 11-17 carbon atoms. The ketones are converted by hydrogenation into a mixture of the corresponding secondary alcohols. These are caused to react with ethylene oxide at 170-80° C. and subjected to distillation in vacuo to obtain the desired product as residue. F. Schlegel, to The Procter & Gamble Co. U. S. Patent No. 2,355,823.

# Antioxidants and Synergists

A few fundamental principles can be set up for the stabilization of fats. If the fat naturally has an optimum content of some phenolic antioxidant, addition of further amounts may be useless; it may even be detrimental as in the case of tocopherols, because they are also vulnerable to oxidation; the quality of the fat may be depreciated by the oxidation products of phenolic inhibitors. Such fats can be benefited by the addition of synergists which prolong the action of the phenolic stabilizer. Addition of a phenolic inhibitor to an animal fat should not be overdone. It is wise to add as little as necessary and to reinforce what is added by the simultaneous addition of synergists alone or in combination. H. A. Mattill. Oil & Soap 22, 1-3 (1945).

### Cleaning Furs

The best method of cleaning furs is a controversial subject. The two methods used are drum cleaning, and total immersion. Proponents of the latter method say that it does a better cleaning job and removes the dirt from the outer surface of the skin as well as from the hair itself. Advocates of the drum method claim that it does not remove the oil, thus avoiding drying out and stiffening of the skin.

There can be no doubt that the oils introduced into furs after tanning serve the important purpose of keeping the fur supple. Their removal will accelerate deterioration of the skin. Likewise there can be no doubt that immersion of a pelt in solvent results in the removal of a greater or lesser amount of the oils depending on the length of immersion and the intensity of the mechanical action used in the process. Some cleaners depend on the use of a quick run in solvent to avoid the removal of "too much" of the oil. The fact that such a process appears satisfactory with a new garment cleaned once or twice is no argument that repeated cleaning by immersion without re-oiling is a safe process.

The logical course seems to be to use immersion cleaning with reoiling or to use a method which does not remove oils, such as the sawdust drum method. If the former is chosen, a small diameter washer is used to reduce mechanical action to a minimum; a high solvent level is maintained; small loads are handled in as short a time as possible; and the usual break operation is omitted. Two or three batch runs of not more than 4 minutes each, followed by light extraction, should be sufficient. These should be followed by a re-oiling which may consist of immersion for 5 minutes in a solution of paraffin containing 1 pound to 4 gallons of solvent, followed by light extraction. Or use may be made of a standard re-oiling compound. After extraction the garments should be well shaken and dried in a well ventilated drying room at a temperature not over 100° F. They may be tumbled in a cold tumbler for 15-20 minutes when nearly dry. Application of heat during drying results in damage to the

pelts. Running the garment in a dusting wheel prior to cleaning is advantageous.

In the drum method of cleaning, maple sawdust or one of the proprietary products especially designed for the purpose is used. This material is wet, but not to the stage of dripping, with Stoddard solvent, or with Stoddard solvent plus 10-25 per cent of chlorinated solvent, added to improve the cleaning and aid in deodorization later. The garment is usually run for 20-30 minutes with the moist sawdust, the latter is removed and excess sawdust cleaned away by running for 20-30 minutes in the cage. C. H. Bayley. Bull. Canadian Research Institute of Launderers and Cleaners, January, 1945.

### Fractional Distillation

Important factors in the construction and operation of laboratory fractionating columns are discussed, including column diameter and insulation, pressure drop, effect of reflux and molecular weight, and pressure factors. Accurate boiling points in the 1-20 mm. range are reported for methyl esters of myristic, palmitic, stearic, oleic, and linoleic acids. The heats of vaporization are given.

Two types of columns, representing two stages of development, are compared with respect to fractionating efficiency. Experimental results are given for the distillation of 50-50 mixtures of palmitic and stearic, stearic and oleic, and oleic and linoleic methyl esters through a Podbielniak column. F. A. Norris and D. E. Terry. Oil & Soap 22, 41-6 (1945).

# Sewage Grease

The sale of grease from the New York sewage-treatment works started in June, 1943 at 8 cents per wet pound. The rate of income during 1943 was \$8,900. One hundred pounds of wet skimmings as removed by hand will contain 53 pounds of water, 37 pounds of ether-soluble fat, and 10 pounds of impurities. Donaldson prefers to keep the municipality out of the soap and glycerine business. W. Donaldson. Sewage Works J. 16, 495-503 (1944).

# Their Orders Prove the Worth of HOUCHIN SOAP MACHINES

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HAWTHORNE

**NEW JERSEY** 

# PRODUCTION

By DR. E. G. THOMSSEN, PH.D.

URING these past weeks it has been my privilege to travel in various sections of Florida and observe intimately some of the industries in this section of our country. Agriculture has developed tremendously through the opening of new lands in the Everglades and other sections. Florida is now second to Texas in cattle production due to the elimination of the cattle fever tick.

The expansion in agriculture is to a large degree due to the Agriculture Division of the University of Florida. It was interesting to note upon a visit to Gainesville the cordial relationship that exists between science and farmers. The role of sanitation in control of poultry diseases was one subject discussed during this visit, and products made by the industries we serve are being recommended in this regard. The Truck Crops Laboratories at Bradenton, though opened but five years ago, are doing a fine job. I was surprised to find that cresylic disinfectants, fly sprays and the newer fungicides among which I recognized many of the well known brands are undergoing extensive tests for problems not generally associated with the growing of vegetables and flowers. These conditions are favorable to an increased market for the types of products featured in this publication in both urban and rural sections.

The market for packing and processing machinery is also increasing. The labor pinch has forced not only the larger manufacturers but also the smaller man to look for ways and



means to cut operating expenses and make labor go further. Within the past few weeks this was forcibly impressed upon me. I visited several small plants making agricultural insecticides and other farm products. Up to now they have been satisfied to get along with mixers and incidental equipment installed in an inefficient manner, because labor was not a big item. Now they find wages high, labor not overenthusiastic and hard to get. It was interesting to note the temporary improvements being made to increase efficiency and the interest in post war improvements. It is quite evident that mixers, elevating and conveying equipment, packers, tanks, mills, pumps and other equipment will be in active demand for quite some period of years.

Another interesting experience was the visit at Orlando to the U. S. Bu-

reau of Entomology and Plant Quarantine. This is a beehive of activity, working especially on health problems for the armed forces in controlling man-annoying insects and especially in the prevention of diseases by diseasebearing insects. Much of this work is being carried on under limitations of military secrecy. When the full story is released, the field of insecticides and repellents will receive much impetus. It was interesting to learn that while DDT has received such great publicity, many other substances are also receiving the attention due them. I was told by one of the investigators that in his laboratory alone over 7500 different compounds have been tested. One comes away from these laboratories with the idea firmly fixed in mind that chemists and entomologists in this field have contributed greatly to the winning of the war. An increased market for insecticides in the post war period should be developed through their efforts. Unfortunately there has been much unfavorable publicity given this Bureau. This was due in part to overenthusiasm over DDT in the press and popular magazines from which a newly discovered toxicant was vested with often fantastic properties which later investigations could not substantiate. No one visiting the Orlando Laboratories will give credence to these unfair criticisms because it is quite evident that the staff is doing an excellent piece of work not only in investigating DDT but also other materials which will advance the insecticide industry in future years. More commendation and less unwarranted criticism will be beneficial.

### Filtration Manual

Anyone interested in the filtration or clarification of liquids should obtain the book recently issued by T. Shriver & Company, Harrison, N. J. entitled "A Guide to Better Filtration." It devotes considerably more space to filtration problems than it does to describing the filter presses made by this Company. The problems met with in filtering operations are tersely, yet fully discussed. Every detail of plate and frame presses, recessed plates, center feed, side feed, closed delivery, open delivery, washing the

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efficient service if properly maintained. The grinding surfaces of these machines lose some efficiency over the years but that efficiency can be restored through reconditioning. They can be made to produce again like new.

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filter cake, leakage control, temperature control, filtering media and aids, closing devices, means of supplying material to the press, costs and capacities are covered in this booklet in an instructive and impartial manner. Quickly grasped illustrations, graphs and tables add value to the written word.

This booklet should be included in the chemical and machine catalogue libraries of all production men interested in filtering problems.

### Bulletin on Waxes

F. W. Steadman, New York 4, have sent us a copy of their bulletins on waxes. Like so many other raw materials today, it is very difficult to obtain waxes of satisfactory quality and in desired quantities. These bulletins are of particular value at this time. They include information regarding substitute waxes for carnauba wax, montan wax, beeswax, ozokerite and japan wax. A range of paraffin waxes, ozokerite, shellac and other waxes are listed. For those who desire the standard waxes like carnauba, these are priced. These sheets are valuable to anyone interested in waxes, as not only are prices included but also descriptions of physical and chemical properties where these are of interest to the prospective user.

### Moisture Detector

The Colloid Equipment Company of New York recently announced the development of the new Delinhorst Moisture Detector. While this apparatus is used mostly for determining moisture in wood, it is applicable to other materials within a range of 7 per cent to 25 per cent water content. It gives instant indications for both surface and subsurface readings within this moisture range, to within 1 per cent of accuracy. The sturdily constructed, easily portable, detector is 7 x 83/4 inches in size. The operation requires no special skill and the electrode needles penetrate without marring the material. The device is being used by many purchasing agents, chemists, engineers, service men and others and merits investigation.

# Change Can Mixers

Kent Machine Works, Brooklyn, are well known for their roller mills and mixers. Among the descriptive literature they have sent us we believe their change can mixers are of special interest. These are made both for liquids and pastes.

The liquid mixers come in sizes of 135, 80, 60 gallons, smaller commercial batches and small portable laboratory size mixers down to one gallon batches. They are well built and the mixing tank in the larger sizes may be had at a convenient height from the floor, discharging the contents through a bottom outlet. Steel barrels can be used instead of special tanks if desired, as the mixing arm is supported in such a manner to make this possible. A bogey truck to support the cans is provided for the smaller batch mixers. Explosion-proof motors are furnished if desired.

The "Super" line of change cans or portable can paste mixers is described in another attractive booklet. These are built in capacities of 100, 60 and 20 mixing gallons. The cans revolve during the mixing, as is usual practice, and may easily be picked off the support with attached handles or trunnions. It is stated that due to the efficient mixing action the collection of material on the mixing blades is eliminated, thereby speeding up operation. Covers are furnished for cans when required. Lightest to heaviest of materials may be uniformly and rapidly mixed. Full specifications of the mixers are included in the catalogue and two speed, explosion resisting motors are available.

### Tall Oil Acid Recovery

Fatty acids present in tall oil are converted into their alkyl esters by reaction with methanol. The resin acids are neutralized with an aqueous alkali solution of a dilution adjusted so as to provide a resin acid concentration of 5-30 per cent. The mixture is heated to gentle boiling to cause a separation into two layers. The upper layer is composed of the major portion of the fatty acid esters and unsaponifiable matter and is recovered. F. H. Gayer and C. E. Fawkes, to Continental Research Corp. U. S. Patent No. 2,356,988.

# **Evaluating Wetting Agents**

The effectiveness of wetting agents as expressed in terms of the Draves Test is not in direct relation to the concentration. For example, if we find by the Draves Test that a product wets out at 10 seconds in a 0.2 per cent solution, it does not mean that it will wet out in 20 seconds in a 0.1 per cent solution. Many products which show an extremely fast wetting speed at 0.5 per cent concentration do not show particularly good efficiency at greater dilutions.

To compare one product against another, the best method is to determine the minimum effective concentration of the cheapest product. The more expensive products should then be diluted in proportion to their cost, and their efficiencies then compared.

It has often been found that so low a concentration of surfaceactive agent is being used that no actual benefit is derived. Under such circumstances, if competitive materials are tested against each other in a practical manner, no difference is found. They are diluted below their effective concentrations. A practice of using too little agent is usually due to its expense. Use of too little, however, does not result in economy but in waste. It is advisable when any product is used to produce a definite result, that the limitation in concentration of the product be predetermined and any comparisons with other products be made on the same basis. The cost of a surface-active agent is no criterion of its value. Minimum effective concentrations must be determined and these results compared in terms of cost. C. B. Kinney, Rayon Textile Monthly 25, No. 12, pp. 97-8.

# Differentiation of Phosphates

A qualitative test for pyrophosphate is that cupric salts and pyrophosphate give a blue precipitate insoluble in acetic acid. Another test is the formation of hexagonal crystals with cobalt ammonic chloride and pyrophosphate. Neither orthonor meta-phosphates react with these reagents. L. Rossi and B. Dinitz. Rev. asoc. buiquim. argentina 11, 139; through Chem. Abs.

### **Isomer Separation**

Alumina cream, silica gel and adsorbent carbon were compared as adsorbents in the separation of an equimolecular mixture of the fats tributyrin and tristearin. Tributyrin was more strongly adsorbed by alumina and by silica gel and could be quantitatively separated. Alumina or silica gel adsorbed mono-, di-, and tristearin in the decreasing order mono, di and tri.

A mixture of 90 per cent oleic, 10 per cent elaidic acid was found in the eluate of the upper part of a silica gel column through which had been poured a benzene or petroleum ether solution of a mixture of equal parts of the two acids. When the original mixture was 80 per cent oleic, 20 per cent elaidic acid, the eluate contained 98 per cent of oleic acid; when the original mixture was 90 per cent oleic, 10 per cent elaidic acid, pure oleic acid was separated.

With a mixture of equal parts of brassidic and erucic acids in benzene-petroleum ether solution and a carbon adsorbent, pure erucic acid was found in the filtrate. With a silica gel adsorbent, 60-100 per cent of the erucic acid was found in the upper part of the column. H. P. Kaufmann and W. Wolf. Fette und Seifen 50, 519-21; through Chem. Abs.

### Addition Agents

The effect of glycerol and of polar and nonpolar mineral oils on the density-temperature relations of sodium stearate and sodium oleate were measured. A nonpolar solvent such as an oil of high viscosity index has no effect, and may be regarded as an inert diluent. Glycerol and oils of low viscosity index have similar effects on the physical states of the soap. The polar solvents have no effect up to the unidimensional melting point of the soap. Above this point an increasing effect is obtained with increase in temperature and with amount of solvent. The effect is marked above the plasticity point and may be large in the region of the bidimensional melting point of the soap. The orienting effect of the nonpolar hydrocarbon chain on the polar grouping of the soap in the presence of a polar solvent is discussed.

The influence of excess acid and alkali in the soap is described. W. Gallay and I. E. Puddington. Can. J. Research 21B, 211-18.

# Fat Stabilization

Lecithin and phosphoric acid are equally effective for the treatment of oxidized fats in the deodorizer. There is an optimum amount of each to be used: the most effective stabilization is obtained with about 0.1 per cent of lecithin and 0.004 per cent of phosphoric acid. The optimum amounts of the two are about equal on the basis of the phosphorus content of the materials. Oils deodorized with the optimum amount of lecithin darkened in color in the deodorizer, although there was no darkening when 0.02 per cent of lecithin was used. The optimum amount of phosphoric acid had no adverse effect on the color. A. E. Bailey and R. O. Feuge. Oil & Soap 21, 286-

# Color of Soybean Oil

The A.O.C.S. tentative bleach test is inadequate to grade certain abnormal types of soybean oil. These off-quality crudes are better graded by a new bleach test employing an activated clay. However, it is less desirable than the present tentative A.O.C.S. bleach test on prime and nearly prime crudes. E. Freyer. Oil & Soap 22, 13-22 (1945).

# Hydrogenating Oils

Simultaneous decolorization, stabilization and hardening of oil such as cottonseed or soybean, is effected by treating it at about 200° C. with hydrogen in the presence of a catalyst comprising nickel together with a copper chromium oxide. W. J. Paterson, to Lever Brothers Co. U. S. Patent No. 2,357,352.

# Degreasing Alkali

A degreasing product is composed of soda ash and sodium chloride in sufficient quantity to increase the fat-emulsifying power of the soda ash. Soc. anon. Savonneries Pierre Ney. Belgian Patent No. 442,358.

### Distilled Tall Oil

The components of distilled tall oil as fatty and resinous acids and unsaponifiable matter, were determined. Two commercial products were studied, a low-percentage tall oil with approximately 10 per cent of resinous acids, and a standard tall oil containing about 25 per cent of resinous acids.

The fatty acid mixture of the first type contained relatively more saturated acids but less linoleic acid than the standard type. Different fractions obtained during the distillation were studied. The composition of the fatty acids changes during the distillation; the percentage of saturated acids decreases and that of linoleic acid increases as the distillation proceeds. When all the components of the distillate are tabulated the values for the unsaponifiable matter and saturated acids show a tendency to decrease and those for the resin acids to increase. The amount of oleic acid increases at first and later decreases, while the amount of linoleic acid increases at first and then remains practically con-

The concentration of linoleic acid amounts to about 5 per cent during the first stages but drops to about 1 per cent in the last fractions. Certain possibilities are indicated by which the distillation procedure may be so improved as to obtain a larger fraction of distilled tall oil with less than 10 per cent of resinous acids and unsaponifiable matter. G. Sandstrom and M. Sandstrom. Svensk Papperstidn. 47, 381-6; through Chem. Abs.

# Washing Textiles

A partially swelled mixture of such material as starch or gelatin is formed with fatty alcohol sulfates or fatty acid condensation products. The mixture is swollen in water for a certain time in the presence of the articles to be washed. J. Mehne. Belgian Patent No. 446,629.

### Cleanser for Greasy Fabric

For washing greasy rags a mixture of 30 parts of trisodium phosphate and 70 parts of potassium sulfate is used. Soc. anon. Savonneries Pierre Ney. Belgian Patent No. 444,310.

# U.S.I. CHEMICAL NEWS

April \* A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries

### 1945

# Current Shortages Rouse New Interest In Natural Resins

Spectacular Pacific Successes Seen Hastening Large-Scale Availability

Synthetic resins, like other commodities required in the war effort, have been subjected to varied restrictions as a result of constantly changing Government specifications and raw-material shortages. The first serious shortage was in glycerine, which affected the availability of many synthetics. Then, when glycerine again became available, the demand for phthalic-alkyd type resins and paints by the armed forces increased to such an extent that WPB had to place these resins under alloca-

Next came allocation of phenolic resins and, later, of the raw materials required for maleic and other specialty resins. Each move reflected the changed requirements of the military and each, of course, affected the availability of the different resins for essential civilian uses. The only conventional synthetic resin that remained free of Government restrictions as to raw materials was Ester Gum; but here the quantities available were consumed in high-rated uses so that, in effect, even it could not be considered for civilian

### New Resins Made

Protective coatings manufacturers were forced to shift from one type of resin to another, just as the resin manufacturers were forced to shift raw materials. U.S.I., for example, found itself turning "technological handsprings" in its research laboratories and plants to make available, first, the urgently needed war resins, and then to provide new and previously untried types for varied purposes. These purposes ranged all the way from resins for use as shellac substitutes and as replacements for phthalic and alkyd types, to resins that could be used in place of the natural resins usually imported from Far Eastern areas occupied by the enemy.

# Rosin Allocated

During the past month, WPB has placed rosin under allocation, setting individual consumption and inventory quotas for specified industries. This has forced the use of resins that contain either very little rosin or none at all. Through the importation of currently available natural resins, U.S.I. has kept stocks available of Congo Gum, Kauri Gum, and Accroides (Yacca or Red Gum), none of which contain rosin. Of these types, the most widely used is Congo Gum, which, until two months ago, was available for use without restriction. However, in March, due to the shortage of rosin and the resulting heavy demand for all types of rosin-free resins, the WPB placed all natural resins under Allocation Order M300—Schedule 96.

Importation of the largest possible quantities of Congo Gum, Kauri Gum and Accroides are being continued. It must be remembered, however, that war-time conditions present difficulties in gathering the gum and shipping it. It is to be expected that the spectacular advances of our armed forces in the Pacific area will open the important gum pro
(Continued on next page)

# Sees Hope for Early Return of Many Prewar Denaturants

Freeing of Axis-Held Territories Already Reflected in Increased Supply of Essential Oils Used in Drugs and Cosmetics

Kwang-Si Province, Calabria, Java, Madagascar, Spain, Siberia—such were the widely scattered areas of the world upon which the alcohol industry depended for denaturants used in alcohols for making lotions, shampoos, bay rum, mouth

washes and the rest. Starting with the fall of France, many of these areas fell into enemy hands. Spain presented political difficulties. In Siberia and Australia, as in America itself, available manpower had to be concentrated on the production of allied war materials. Measures taken by alcohol producers, the Treasury Department and Central and South American countries have, to a surprising ex-

Measures taken by alcohol producers, the Treasury Department and Central and South American countries have, to a surprising extent, alleviated many of these shortages. U.S.I., for example, has followed a system of interplant transfers which, while costly, has helped to meet customers' needs equitably.



Harvesting citronella grass in Ceylon. Oil of citronella is the starting point for the synthesis of menthol.

# Claisen Reactions Yield Superior Drying Agents

Drying properties greatly superior to those found in naturally occuring oils, such as linseed, tung and certain fish oils, are claimed for a series of new esters described in a recent patent.

These esters are generally prepared by condensing, via a Claisen reaction, esters derived from the glycerides of natural oils such as tung, menhaden and sardine. These esters are heated in the presence of a condensing agent such as sodium hydride or U.S.I.'s Sodium Ethoxide until the conversion to the sodium derivative of the beta-keto-ester is substantially complete. The reaction mixture is then acidified and washed free of salt, acid and other soluble impurities. The water and diluent are removed by distillation and the desired product recovered as a residue.

# Italian Shipments Start

However, the shipment of 80,000 pounds of oil of bergamot from Italy, last year, was the signal for new hope for the early return of the many essential oils which cannot be produced economically in the Western Hemisphere. The freeing of France and the rapid rolling back of the Japs in the Pacific has given fresh impetus to these hopes. Here, briefly, is the current situation as it affects the more important odoriferous denaturants:

Oil of citronella — Important as the starting point for the synthesis of menthol, this oil came principally from Java. Currently, an inferior grade is available from Ceylon. Guatemala and other Central American Countries have started growing citronella grasses, but it will take a year or two to get real production.

Mint oil — This source of natural menthol is now coming in large quantities from Brazil. While higher in price than the product originally obtained from Japan, natural menthol is now cheaper than the product synthesized from oil of citronella.

Oil of cassia - This essential oil (USP), which is used as a substitute for oil of cinammon, was produced exclusively in Kwang-Si Province, China. Currently synthetic oil of

(Continued on next page)



No class of chemicals is more "global" in its origin than essential-oil alcohol denaturants. None has been more dislocated by cnemy conquests, shipping shortages and manpower restrictions.

### Natural Resins

(Continued from preceding page)

ducing centers in the Philippines, Nether-lands, East Indies and Singapore – much sooner than we once thought. The availability of these important resins will alleviate continning shortages of rosins and synthetic resins without placing an additional strain on our domestic manpower.

# Removes Fatty Acids by New Technique

Vegetable and animal oils for many uses are said to be freed from color, lipeids and free fatty acids by a technique which uses a vacuum neutralizer, but no heat. The oil to be treated is first washed with

water. After agitation, the mixture of oil and water is allowed to stratify, the lipoids being drawn off as part of the water layer. The oil is made color-free by mixing with clay and

filtering.

Rid of lipoids and color, the oil is treated with a mixture of ethanel and sufficient sodium hydroxide to saponify the free fatty acid, the final reaction in this step taking place as the mixture is aprayed, under vacuum, into a neu-tralizing chamber. The result of this reaction is alcohol soap and colorless oil, free from lipoids and fatty acids. Alcohol is recovered from the residue by distillation, leaving a by-product of relatively high-grade soap stock.

# **New Dry Mounting Tissue Uses Phthalates and Alcohol**

A new type of dry mounting tissue, used to produce fast, flat mounts of photographs and the like, is described as oversoming the common tendency to "block" or stick together in the package. The new tissue, described in a recent patent, is coased with a thermoplastic adhesive which does not become tacky at temperatures below 126 F., and therefore is non-adhesive at normal room temperatures. The adhesive heat seals, however, when pressed with an iron meintained at 200 to 220 F.

The adhesive consists essentially of cellulose accetate butyrate, a compatible plasticker, such as diethyl or dibutyl phthalate, and an alkyd resin. The adhesive may be applied to the tissue from a melted mixture or in a bensene-denatured alcohol solvent.

# Prewar Denaturants

cassia, denaturant grade, is substituting for this substitute.

Camphor — Synthetic camphor has been in large-scale production in this country ever since the Japanese monopoly was broken in the early 30's. However, its important uses in photographic film, plastics, etc., made it hard to get now.

Off of lavender — When the price of this product of Southern France skyrocketed, the Treasury Department authorized the substitution of demastic oil of cedar leaf. It is hoped that lavender will soon again be available from

Oil of bay — This essential ingredient of the familiar bay rum is a product of Puerto Rico and the Virgin Islands. It is now being imported without serious difficulty.

Domestic products - Oils of sassafrass, turpentine, pine, wintergreen, peppermint and cedar leaf were, fortunately, in gaduction in this country long before the war. However, the shortage of manpower and the needs of our armed forces have combined to seriously limit the use of these oils as depaturants.



earating clove buds and stems on far-off naibar. Oil of cloves also comes from the nsh island of Madagassar.

# **Prolonged Penicillin Action**

Following research in the Naval Medical Corps, it is indicated that the effective action of a mixture of penicillin and bees-wax-peanut oil lasts much longer than penicillin alone. Action is still further pro-longed by application of an ice-bag at the point of injection.

### TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Te seal waterpreed bays, four adhesives are of-fered. Different characteristics claimed for each adapt them to four different types of jobs. They are said to meet Army-Navy packaging specifica-(No. 931) USI

A range of filter adds is offered for tasks such as clarifying beer, refinery products and pectins, or the product of the prod USI

Soap that lathers better, and requires less soap substance, is promised by the processor of a new colloidal clay, offered for use in soap manufacture. USI

A new rolling-oil additive, for the metal working industry, is designed to blend with mineral oil at roem temperature, and to be modified by adding kerseene. This refined fatty enter additive can be embined in proportions of 3 to 5 per cent of the mineral oil.

IISI USI

Rigid synthetic rubber products of high electrical resistance can be produced by incorporating a new resin substitute for carbon black, according to an announcement. Proper mixtures of the three grades of the new resin are said to impart desired qualities of rigidity, hardness, elongation and tensile strength.

USI

WISI USI

A new wetting agent, claimed to contain no oil and only a trace of inorganic salts, is said to be pasticularly adapted to tasks such as scousing wook, westing back dried skins, and in fulling soaps to assist rinsing, etc.

(No. 926)

USI A new adhesive, which should provide time and labor savings in merchandise handling, is designed to hold paperboard and wooden boxes together in unit loads. It is said to combine high shear strength with low tessile strength, thus preventing slippage during transit, yet making it easy to separate packages at their destination.

1127 (No. 927)

USI

A fire- and shock-resistant plastic, that is said to generate no toxic gases when heated, and to be easily moided, has been developed. Key to the annusual properties of the new plastic is the use of asbestos instead of organic compounds as a filter.

A new glass is being manufactured to will operating temperatures up to 656 F and it shock to 400 F. It is earld to have four in strength and six times the shock-resisting plate glass, and is suggested for use in for acids, elkalis and solvents.

USI

# U.S. NOUSTRIAL CHEMICALS, USI ACETONE ACETIC ESTERS INTERMEDIATES OXALIC ESTERS PHTHALIC ESTERS ETHERS OTHER ESTERS FEED CONCENTRATES

# PRODUCTS AND PROCESSES

### Polymerization Detergents

The raw materials consist of amides of acrylic or methacrylic acids to the nitrogen of which is combined a radical substituted with carboxyl or sulfonic groups or salts of these compounds. The products are suitable as detergents. I. G. Farbenind. A.-G. Belgian Patent No. 445,946.

### Formaldehyde Soaps

Experiments show that the formaldehyde-containing soap of the supplement of the German Pharmacopeia VI containing 23 per cent of formaldehyde is much superior to that of the Swiss Pharmacopeia V, especially toward Staphylococcus aureus and B. coli. J. Thomann. Pharm. Acta Helv. 19, 161-6; through Chem. Abs.

# Soap Manufacture

The mixture of fat and lye is preheated under superatmospheric pressure to a temperature which causes saponification to proceed rapidly from the start. The saponified mixture is then passed through a watercooled zone under reduced pressure. The aqueous phase is removed by evaporation and the cooled mixture is passed on to the zone of centrifugation. A. T. Scott, to The Sharples Corp. U. S. Patent No. 2,348,855.

# Hardening Soap

Soft unsaturated fatty-acid soaps are converted directly into hard soaps without resorting to elaidinization or hydrogenation prior to the soap making, by blowing an inert gas through the anhydrous soap in the presence of an inorganic catalyst. During this treatment the soap is kept at 200-360°C. The preferred gas is steam and the catalyst is a nonmetallic member of the 6th group of the periodic table, preferably selenium. After treatment the catalyst is removed by oxidation.

The product is free of objectionable odor and unsaponifiable components. It forms a hard soap when grained. The liberated acids have a higher melting point and desirable physical characteristics. This process is applicable to the production of soap in situ. R. B. Colgate and J. Ross, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,359,404.

### Dry Cleaner Addition

Clothing and other articles are dry cleaned by treating with a hydrocarbon or a chlorinated hydrocarbon solvent containing 0.1-0.5 per cent by weight of an ethylamine such as diethylamine. B. P. Ridge and Imperial Chemical Industries Ltd. British Patent No. 555,421.

# Cleaner for Tin

An alkaline detergent for cleaning tin is made of 30-90 parts by weight of an alkali metal metasilicate, 5-55 of alkali hydroxide, 3-20 of alkali perborate, 1-10 of a water-soluble zinc salt, and 1-10 of a water-soluble calcium salt. C. Schwartz. U. S. Patent No. 2,359,587.

# Disinfectant Dry Cleaner

A dry-cleaning composition which is also disinfectant is prepared by mixing carbon tetrachloride with • 4 per cent of methanol and 0.4 per cent of 2-benzyl-4-chlorophenol. G. Endres, vested in the Alien Property Custodian. U. S. Patent No. 2,348,795.

### Metal Cleaner from Lignin

Residual lignin from the hydrolysis of wood is treated with an aqueous alkaline liquor. The residue separated from the liquid is dried and used as such for cleaning metals. H. Schubert, Soc. Belgian Patent No. 444,156.

### Washing Compounds

During the manufacture of soaps from fats or fatty acids, saponification is carried out of compounds such as sulfonic acid halides which contain halogens, oxygen and sulfur. Such compounds can be obtained by the

action of halogens and sulfur dioxide on nonaromatic hydrocarbons. I. G. Farbenind. A.-G. Belgian Patent No. 443,917.

# Alkali and Water Softener

A washing and water-softening compound is composed of alkali carbonates, water-soluble alkaline-earth carbonates, and an alkali silicate of such composition that considerable quantities dissolve only when the required degree of softening has been reached. Henkel & Cie G.m.b.H. Belgian Patent No. 445,500.

# Synthetic Detergent

A paraffin sulfonate obtained by the action of sulfur dioxide and chlorine on long-chain hydrocarbons, followed by saponification, is mixed with 3-4 times its weight of caustic soda and water with usual additions. The hot mixture at 70-90°C. is spray-dried. I. G. Farbenind. A.-G. Belgian Patent No. 445,978.

# Sulfated Detergent Compounds

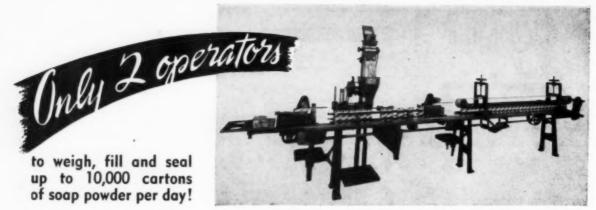
Unsaturated hydrocarbons of high molecular weight obtained by the hydrogenation of oxides of carbon are treated with sulfuric acid to obtain detergents with high foaming power. I. G. Farbenind. A.-G. Belgian Patent No. 443,918.

# Foaming Agent

Saturated fatty alcohols are condensed cold and under atmospheric pressure with members of the terpene series. After condensation the hydroxyl group or groups remain free. The products have good foaming power. Soc. anon. chim. Sinnova ou Sadic. Belgian Patent No. 446,358.

# Washing and Bleaching Agent

Compound salts of alkali percarbonates are mixed with salts containing water of crystallization and substances containing in the pulverulent state water bound to colloids. The mixture has a vapor tension of 4-9 mm. at 20°C. and 9-19 mm. at 30°C. Henkel & Cie. G.m.b.H. Belgian Patent No. 444,304.



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# NEW PATENTS

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Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,368,357, Insecticide, patented January 30, 1945 by Edward Harvill, Yonkers, N. Y., assignor to Boyce Thompson Institute for Plant Research, Inc., Yonkers. An insecticidal composition comprising a compound having the formula:

 $COOC_2H_5 \\ H-C-R_1 \\ R_2-C-COOC_2H_5 \\ COOC_2H_5$ 

No. 2,368,560, Method of Preparing Hydroxy Heavy Metal Soap Compositions, patented January 30, 1945 by Arthur Minich, Westfield, N. J. Process of producing a dispersed hydroxy heavy metal soap in a dehydrated organic vehicle, which comprises: thermally dehydrating in a substantially water immiscible organic vehicle an aqueous magma comprising the reaction product of an alkali hydroxide and a sufficient quantity of at least one water-soluble heavy metal salt to completely react with the alkali hydroxide, there being present in said vehicle during said dehydration step a quantity of at least one substantially water-insoluble non-volatile organic acid in an amount insufficient to produce the normal salt of such heavy metal but sufficient to produce hydroxy metal soap, whereby said hydroxy heavy metal soap is finally dispersed in substantially insoluble form in said dehydrated organic vehicle.

No. 2,368,667, Parasiticidal Preparations, patented February 6, 1945 by Elbert C. Ladd, Passaic, N. J., assignor to United States Rubber Company, New York. A fungicidal composition comprising a carrier and 2,2,3,3tetrachloro - 1, 2, 3, 4 - tetrahydronaphthalene-dione-1, 4 as an essential active ingredient.

No. 2,368,709, Insecticide, patented February 6, 1945 by Mortimer T. Harvey, East Orange, N. J., assignor to The Harvel Corp. An insecticide comprising a solution of an insecticidal rotenone product in a petroleum solvent with a chlorinated phenol having an unsaturated hydrocarbon substituent having from fourteen to 28 carbons as a cosolvent, said chlorinated phenol being present in from about five to 20 per cent by weight of the petroleum oil and the said insecticidal product being present in from about five to 20 per cent by weight of said chlorinated phenol.

No. 2,368,949, Saponification Products of Polyvinyl Esters, patented February 6, 1945 by Joseph Edward Smith, Wilmington, assignor to E. I. du Pont de Nemours & Co., Wilmington. In the process for preparing water soluble saponification products of polyvinyl esters which are free from impurities that break emulsions or dispersions prepared with said saponification products, the step which comprises treating an aqueous solution of said saponification product of the polyvinyl esters with activated charcoal.

No. 2,369,137, Insecticidal and Fungicidal Materials, patented February 13, 1945 by Gerald H. Coleman and Gerald A. Griess, Midland, Mich., assignors to The Dow Chemical Co., Midland, Mich. An amine salt having the formula

$$\left[ \begin{array}{c} NO_{F} \\ \end{array} \right] \left[ \begin{array}{c} H \\ \end{array} \right]$$

wherein R represents a member of the group consisting of alkyl radicals containing from 1 to 8 carbon atoms, inclusive, the phenyl radical, and the cyclohexyl radical.

No. 2,369,372, Manufacture of Soap, patented February 13, 1945 by Leopold Sender, Baltimore, assignor to The Sharples Corp., Philadelphia. In the treatment of soap nigres, the process comprising separating impurities from a soap nigre together with a portion of the soap of the nigre together with a portion of the soap of the nigre, thereafter diluting the material separated from the nigre to liberate impurities from the resulting diluted mixture and separating the impurities from said mixture.

No. 2,369,429, Insecticide Composition, patented February 13, 1945

by Clifford J. Boissonou, Concord, Calif., assignor to Shell Development Co., San Francisco. An insecticidal composition for use in aqueous emulsions comprising spray oil, and between about .01 and 2 per cent by volume of said spray oil of a depositing and emulsifying agent consisting of a carboxylic acid ester of a polyhydroxy alcohol containing at least three and not more than four hydroxy radicals and having a neo carbon atom, said alcohol being esterified with an acid having seven or more carbon atoms per molecule.

No. 2,369,855, Insecticide, patented February 20, 1945 by Henry J. Reynolds, Sumner, Wash. A concentrated insecticide in dilutable paste form comprising a finely ground root of a fish poisoning plant containing as much as 5 per cent rotenone and other active principles, a solvent for extracting the active principles, a petroleum distillate to serve after application as a contact agent, the dioctyl ester of sodium sulfosuccinate to prevent precipitation of the active principles, and a resino-cellulosic wood flour, said finely ground root and wood flour bein present in substantially equal proportions by weight.

No. 2,369,959, Pest Control, patented February 20, 1945 by Albert L. Flenner, Wilmington, and Frank H. Kaufert, St. Paul, assignors to E. I. du Pont de Nemours & Co., Wilmington. An industrial preservative and disinfectant composition containing as an essential active ingredient 6-nitrotrichlorotoluene and a carrier therefor.

No. 2,370,349, Herbicides, patented February 27, 1945 by Francis E. Hance, Honolulu, Hawaii. An aqueous herbicidal solution containing a water-soluble arsenite and a water-soluble pentachlorophenate, the combined amounts of said substances being a fraction of the amount required when either is used separately in an aqueous solution to produce an equivalent herbicidal effect.

# Offers Publicity Abroad

Manufacturers of soap and sanitary chemicals wishing foreign publicity for their products can submit press releases, news items and listings of bulletins available for free distribution for inclusion in the domestic, British, Australian, Swedish, Belgian and French editions of the Anglo-American Industrial Newsletter, published at 8 W. 40th St., New York 18, according to a recent release. The Newsletter is designed to introduce American products to the overseas market.

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# Quartermaster Soap Use Bulletin

The Office of the Quartermaster General has published a technical bulletin describing the most efficient method of dish washing, it was revealed recently by the War Department. One of the purposes of the bulletin, according to a release announcing it, is the conservation of soap and washing compounds. The bulletin covers two types of dishwashing compounds for mechanical dishwashers, as well as recommended procedures for using government issue hand soap.

# Emery Has New Plastic Dept.

A new department to handle the development and commercial application of a series of new fatty acid derivatives has been set up, and J. D. Faiella has been named to head the department, it was announced recently by Emery Industries, Inc., Cincinnati. Mr. Faiella, who will direct the activities of the new "Plastolein" products department, is a 1937 graduate of the University of Richmond, Va., and began working with plastics at

Mellon Institute of Industrial Research, Pittsburgh. Since that time he has served in a technical capacity in the plastics industry.

# George H. Ware Dies at 75

George H. Ware, 75, retired member of William M. Ware & Sons, oil and fat brokers, with offices in New York and Boston, died of a heart ailment in his home in Stapleton, New York, March 13. He had been ill for the past two years. A native of Belfast, Ireland, he came to the United States with his parents when he was a small boy. He is survived by a son, Dr. John S. Ware, of Stapleton.

### Salesmen Hear Publicker Head

Dr. Lewis H. Marks, vice-president, Publicker Commercial Alcohol Co., Philadelphia, was guest speaker at the Mar. 21, luncheon of the Salesmen's Association of the American Chemical Industry, held at the Hotel Roosevelt, New York. Dr. Marks discussed war and post-war phases of the chemical industry.

# C-P-P Sales At New High

Domestic sales of Colgate-Palmolive-Peet Co., Jersey City, N. J., for 1944 reached a record high of \$134,-007,782, E. H. Little, chairman and president, revealed in his annual report to the stockholders, issued last month. Domestic sales combined with those of foreign subsidiaries, for which such information is available, were \$170,463,924, compared with \$146,-424,512 in 1943. Net income in 1944, after \$9,320,770 provision for taxes, amounted to \$7,002,483, equal to \$3.30 a common share, compared with \$6,616,969, or \$3.10 a share earned in 1943, when taxes were \$6,448,921.

Mr. Little stated that the board of directors has approved a post-war property modernization program contemplating the expenditure of about \$9,000,000. Engineering work has been started on various projects. Dividends paid during the year were \$531,272, or \$4.25 a share on preferred, as in 1943, and \$3,434,963, or \$1.75 a share on the common, compared with \$1.50 in 1943.

# ACKNOWLEDGED HIGHEST QUALITIES

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CINCINNATI

# GERMICIDAL SOAP

(From Page 51)

start of the scrubbing, so that the surgical scrub-up time could be greatly shortened, and that no alcohol or iodine, which are often employed, are needed to degerm the skin of a surgeon who has been using G-11 soap regularly.

Thus the laborious and timeconsuming scrub-up technique becomes simplified merely by a substitution of G-11 soap for ordinary soap at the hospital and in the surgeon's home and office.

During recent years, surgeons have shown a tendency to replace tincture of green soap by plain white soap for pre-operative handwashing because the white soap is less irritating to the skin, and because the alcohol in tincture of green soap is apparently of little value in killing spores (31). It is quite evident that the white soap would be greatly improved by the addition of Compound G-11.

IF, THEN, a non-toxic germicidal soap is available, what is its value? For medicinal purposes its use is too apparent to dwell on. As a surgical washing soap, it is effective, cheap, and timesaving.

It should be used, first and foremost, wherever there is more than the average possibility of a communication of disease—in hospitals and clinics, public toilets and washrooms, in army camps, on ships and, to the extent that soap can be used at all, right on the field of battle.

In such public places as the barber shop and beauty parlor, G-11 soap can reduce skin infections and irritations. In the factory where workers come in daily contact with cutting oils which cause a high rate of dermatoses and skin troubles, the use of G-11 soap helps to decrease the number of cases, arrests the spread of dermatitis, and speeds up healing where infection has set in.

In restaurants, the use of G-11 soap by the personnel and for dishwashing holds forth the possibility of

reducing the hazard of communicable respiratory and intestinal disorders, a matter important insofar as public health is concerned.

The value of G-11 soap in every instance, however, would be considerably enhanced if this soap were being used regularly by the individuals in their homes, factories and offices. Its great achievement is its cumulative effect in reducing the bacterial flora of the skin.

Why not, then, a germicidal soap for the public at large? Why should not every person be using this germ-killing soap every time he washes his hands, for bathing, for shaving, for laundering, and on other occasions? To ask the question is to answer it. There is no reason why not; there is every reason why, in the interests of a more thorough and genuine cleanliness, in the interests of general health, of reduction of contagion and epidemics, a germicidal, non-toxic and non-irritating chemical should become an ingredient of a large part of the soap made in this country.



# LANOLIN SOAPS (From Page 44)

7 or less. Such a cleanser may consist of a neutral sulfonated fatty oil, 1/2 per cent of the synthetic wetting agent, and 2/5 per cent of lanolin.

For workers sensitive to soaps or alkalies, Schwartz (25) has recommended a special cleanser in solid cake form to which lanolin may be added for emollient purposes. The following formula was suggested:

Synthetic	C	le	te	ei	rį	g	e	n	ŧ		*	×		*	×	20
Lanolin																
Colloidal	cl	la	y				*	×		*		*	*	*		76
Perfume .							*								×	1

While it is not the purpose of this discusion to enter into methods for making soaps superfatted with lanolin, it should be mentioned that suitable procedures have been described in both the technical and patent literature (2, 3, 6, 40). Lanolin may be added to milled as well as to cold process soaps. The quantity added ranges from one to five per cent, but on occasion higher proportions of lanolin have been incorporated in soaps or special cleansers for the skin.

From the foregoing it should be quite evident that superfatted soaps have a definite place in modern personal cleanliness. The emollient and other desirable qualities inherent in lanolin make it a superior material for superfatting purposes.

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### Surface-active Condensate

A fatty acid is heated with an aqueous solution containing 20-60 per cent of a monoalkylol cyanamide at a temperature of 80-100°C. Dehydration is carried out subsequently at 97°C. The products are high in wetting power. R. F. Uncles and K. K. Kurtz, to American Cyanamid Co. U. S. Patent No. 2,349,061.

# SOAP LEGAL DECISIONS

(From Page 46)

ported January, 1944, clearly illustrates legal distinctions between special and general agents. In this case it was shown that a salesman was required by his employer to submit all contracts for approval and ratification. In other words, the salesman was a "special" agent with no authority to make valid contracts. The salesman's employer refused to approve an order taken by his salesman. The purchaser had no recourse when the seller refused to deliver the merchandise.

On the other hand, see Bylan v. Dossin's Products, 16 N. W. (2d) 704, reported January, 1945. Here a sales manager made a sale contract with a purchaser. This contract was not approved by the sales manager's employer, but the higher court held the contract valid, because a sales manager is a general agent and the employer is liable on all contracts unless the latter notifies prospective purchasers to the contrary.

In Lever Bros. Company v. Procter and Gamble Mfg. Company, 139 Fed. Rep. (2d) 633, it was shown that an inventor obtained a patent on a process of producing a floating soap. The process as explained by the inventor comprised placing a soap mass containing less than about 25 per cent moisture in a closed mixing chamber, working the mass under pressure in the presence of air, while in a plastic or semi-fluid condition, to uniformly distribute air throughout the mass. Afterward the mass was formed into bars or cakes.

The higher court indicated that the claim was void because it does not supply or give sufficient information of the process so that persons versed in the soapmaker's art could make the soap. The court said: "Our patent laws do not require an inventor to be a Lavoisier or a Pasteur. And we think, in this case, too much attention has been paid to fine-spun theories of higher chemistry and too little heed has been given to the intensely practical aspects of the soap-maker's art. . . ."

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Floor Products - Polishes - Chemical Specialties

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NH Dust, a nitrated hydrocarbon derivative, is an organic insecticide that has all the desirable features of a Pyrethrum-Sodium Fluoride combination, but with these additional features:

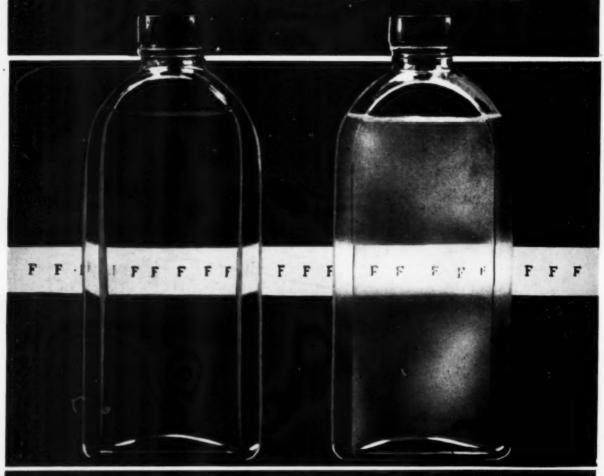
- 1. Kills insect eggs.
- 2. Has long residual action.
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- 4. Costs less than Pyrethrum powders.

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# FELTON CHEMICAL CO., INC.

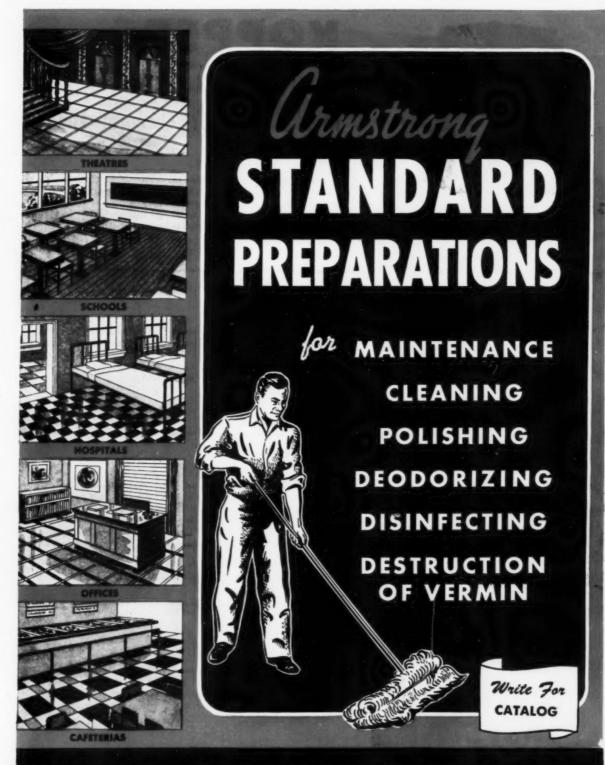
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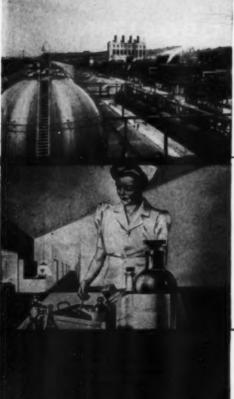
# **KOPPERS**

... has a <u>big</u> <u>place</u>

in the Coal Tar Chemical Field

1. Ceal is the Great Chemical Reservoir — Two-thirds of the synthetic resins produced in the U. S. in 1942 (the last year for which published figures are available) were based on coal carbonization products. Koppers has been one of the nation's leaders in the carbonization of coal and in the utilization of the products of coal carbonization.

2. The Coke Oven Unlocks Chemicals in Coal—Coal burned under a boiler or in a furnace is consumed. Coal used in a modern coke oven is distilled or carbonized. From the gas and vapor come many chemicals essential to modern life and industry. Koppers is the largest American builder of coke ovens.



3. Koppers Plants Help Recover and Refine Chemicals — Koppers designs and builds many of the plants which recover and refine coal tar chemicals which go into synthetic rubber, plastics, varnishes, dyes, solvents, motor fuel, disinfectants, medicines, flavors, explosives, and other products. This photo shows a synthetic rubber chemical plant built and operated for the Federal Government by Koppers.

4. Koppers is One of the Principal Sources of Coal Tor Chemicals—Koppers serves the chemical industry by producing phenol, cresols, Xylenol, benzene, toluene, xylene, pyridine, picolines, lutidines, quinoline, other tar bases, naphthalene, tar acid oils, and other products.

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First things DO come first!—and we believe that you'd want it that way. Current demands of the military services and essential war industries are given preference. Consequently, shipments to manufacturers must be apportioned for an equitable distribution. And when a shipment is suddenly diverted, we know you'll understand that it is going where it will do the most for Victory.

We hope that the day will come soon when you can once again depend on SOLVAY for *prompt* shipments, just as you are now assured of the highest standards of purity and uniformity of SOLVAY CAUSTIC POTASH.

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# INSIDE NEWS

APRIL

PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y.

1945

# War's Diverse Demands Improve Tin Containers

Strange service in still stranger sections of the world is all in a war day's work for tin cans and containers. Demand for meeting never - before - encountered conditions are building up a backlog of newly learned knowledge in container-making technique. From this, peacetime packaging improvements are sure to emerge when the guns cease firing.

By placing the needs of the fighting forces foremost, National Can Corporation is recognizing a responsibility in hastening victory. Among the many special cans and containers manufactured by the Corporation to protect war equipment and food supplies are three in particular, which are of more than usual interest.

### Containers for Fogproof Paste

Fogproof paste is used on lenses for gas masks, oxygen helmets, and other similar apparatus. The container for the paste is of a slip cover design, and protects its important contents well. Large quantities are continually being produced at a high rate of speed to supply the volume needed.

### Containers for War Gas Detectors

In an area where skin-blistering gas can be expected, the importance of precautionary equipment cannot be over-emphasized. The presence of mustard or arsenical vesicants is established by color change in a type of war gas detector now in wide use. The container for this detector is airtight and necessitated the development of a suitable compounding material for side seam sealing. Its closure is also of a slip cover type and, as a final operation, is taped.

# Meals Heated in Containers

Men in the field advance far beyond any field kitchen. When they do, a special alcohol container is proving invaluable—a container capable of heating a meal for five men, or six individual "C" ration meals. These are ½ pint triple tight solid alcohol containers. Naturally, all of these diversified wartime container demands have stimulated the work of National Cap's research department.

Naturally, all of these diversified wartime container demands have stimulated the work of National Can's research department, accelerated laboratory experiments, and speeded up plans for new product development.

923

# Edible Oil

Growing sunflowers on a commercial scale for edible oil is a new enterprise in North Dakota. 932

# **Increases Tomato Yields**

The long-standing difficulty in getting a good set of fruit from "hothouse" tomatoes appears pretty well solved. Researchers have found beta-naphthoxy acetic acid and dichlorphenoxy proponic acid markedly promotes fruiting under winter greenhouse conditions. This development is expected to make it possible for greenhouse operators to plant tomatoes earlier than in the past, obtain larger yields, and to complete the marketing of the crop by the time field-time grown tomatoes become available, Both products are economical to use.

933

### Sunburn Preventive

Titanium dioxide has been found in field tests to be a most effective sun screen to prevent sunburn. 934

# **Tangerine Syrup**

Tangerine syrup, rich in sugar and vitamins, light brown, and honeylike with a sweet, fruity taste, has been produced by the chemists of a southern citrus commission.

### Foam in Headspace

Foam in the headspace of beer or carbonated beverage containers frequently spells difficulty, but a patent has recently been issued on a method whereby carbon dioxide foam eliminates oxygen from the headspace before sealing. Making use of the controlled evolution of carbon dioxide, a small U-tube, heated to constant temperature with hot water, is dipped into each container on the filling line in turn. The temperature difference between the beverage and the heating water, as well as the time and depth of the immersion of the U-tube, when in the proper relation to one another, will give a foam that can be depended upon to persist until the container is sealed.

### **Converting Sea Water**

A solar still—available in a new pocket size—assures a continuous supply of fresh water to Army and Navy flyers forced down in tropical waters. It converts salt water into safe drinking water by harnessing the rays of the sun. By evaporation and distillation. sea water becomes fresh.

# Leaves Rich in Protein

Vegetable leaves which are wasted in processing plants are rich in scarce protein. carotene and riboflavin. Experiments prove these waste leaves can be prepared as valuable chicken and animal meal.

### **Three Dimensional Effects**

A patented process offers the industry a method of totally enclosing beautiful three dimensional effects in colors in such products as containers, name plates, dials, insignia, counter displays, trade marks, etc. 924

### **Eye Treatment**

Welders suffering "flash" burns, or actinic conjunctivitis, an eye condition caused by exposure to ultra-violet rays, are being given a specially prepared formula for home care.

### Soap for Medical Use

The medical uses of soap have been made the subject of a symposium by ten of the outstanding medical authorities on soaps and their use. The effects of soap on normal and abnormal skin are considered, and the new text also considers the effect of soap on the hair, soap in shaving, and soap in industry.

# Sugar from Birch Tree Sap

Sugar is being extracted from the sap of birch trees in Russia. A single tree yields about 25 gallons of sap a day which is then processed by a new method developed at Sverdlovsk Research Station. 927

# **Cotton Pest Insecticide**

A new insect powder, known as Babbini, is being produced in Peru for cotton pests.

# **New Alcohol Source**

Alcohol is now being made commercially in Texas from Sotal, a native plant which grows profusely. 929

### Gets the Air Out

Vacuum packing of spray dried milk adds greatly to its useful life. However, vacuum applied only for a short time removes the air from around the milk particles but leaves untouched whatever air may be entrapped within the individual pellets. It has now been demonstrated that if the dried milk is held under moderate vacuum for a longer period the entrapped air will be removed, to leave a product that is truly vacuum-packed. Ten inches absolute pressure, for 10 hours, does the trick.

# Synthetic Blood Plasma

A method for producing synthetic blood plasma from a by-product of sugar manufacture has been developed. Unlimited production is possible. It is transported in powder form and is not dependent upon the blood group of the recipient.

# NATIONAL CAN

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# Flavor Tests

With the increasing recognition of a tie-up between food quality and its taste and appearance, taste test panels are becoming as necessary a part of a food plant laboratory as are balances and reagents. But the research director who would not accept a balance without a guarantee of its accuracy, and who makes great demands as to the purity of reagent chemicals, will frequently accept the opinions of the taste panel without making any inquiry as to their individual ability to distinguish flavors or to represent the choice of the market for which the product is intended.

Recent British work indicates that the panel should be made up of individuals between 15 and 40 years of age, since in childhood taste sensitivity is less and it again begins to decline after about 40. Also, the ability of the individual members to distinguish differences in flavors in the particular products to be tested must be checked because some people have a taste deficiency, or at least greatly elevated threshold of sensation, for certain substances, while showing normal perceptiveness with regard to other elements in the flavor. Others are more readily subject to taste fatigue. It is unnecessary to point out that the presence of such individuals on the panel may lead to erroneous results, because in taste testing as in any other experimental procedure, results can be no more accurate than the apparatus used to determine them,

### **Animal Fats**

Citric acid helps the antioxidants that occur in natural fats, so that rancidity is prevented for a longer period of time. The Meat Inspection Division, Bureau of Animal Industry, has issued a memorandum permitting the use of citric acid as a preservative in animal fats and shortenings which contain animal fats, in a quantity not exceeding 1/100 of 1 per cent. We may soon expect to see shortening with the legend "With not more than 1/100 of 1 per cent citric acid added as a preservative" on the labels. Another advance for the technologist.

### Cetylpyridinium Chloride

Cetylpyridinium chloride is reported to have high germicidal and bacteriostatic potency. It has been recommended, in 1:4000 concentration in a base of 18 per cent alcohol, 10 per cent glycerin, and about 70 per cent distilled water, for inhibiting the bacterial growth of the oral cavity. Another interesting application is its use in bronchial lavage in non-tuberculous infections. The procedure is to dilute a 1:5000 concentration with Bledsoe-Fisher hypertonic saline solution. Under these conditions it is said to be highly germicidal, to have a decided low surface tension action and to be non-irritating in the concentration used.

# **Technical Topics**

EDIBLE OIL FROM OKRA—Okra, easily grown in the South, is reported to have an edible oil equal in value to cottenseed oil and is worth making Okra a major southern crop. Okra fiber, long and tough, has value in making cordage. The pith of the seed, as well as the fiber, may be sources of cellulose similar to peanut hulls.

NEW WATER DECONTAMINANT — A new water decontaminant is found in succinchlorimide, which unlike chlorine and chlorine compounds, is stable and is not counteracted by organic matter. In a dosage of one 2-grain tablet to one quart of water, very large numbers of intestinal pathogenic bacteria are killed within 5 to 10 minutes. 943

COMMON SEAWEED - Gracilaria confervoides is providing a new business for Atlantic seacoast towns. It is just a common seaweed but we need it to thicken soups, ice cream, chocolate milk; as an adhesive to clarify liquids; and in cheese, canned fish, pastries, confections, cosmetics and paint.

CRUDE VOLATILE OIL—The crude volatile oil obtained from the leaves and branching of the "tea trees" (Melaleuca alternifolia) is reported to possess eleven to thirteen times the germicidal power of phenol against Bacillus typhosus. It is non-poisonous to animal life and has a pleasant odor.

945

RUBBER ADHESIVE SOLUTIONS—Rubber adhesive solutions, equal to those made with an aromatic solvent can be made with a petroleum solvent if 25 per cent of the rubber component (masticated smoked sheet) is replaced with gelled castor oil. 946

RECOMMENDED PLASTICIZERS—The dilactates of glycols containing three to six carbon atoms (diethyleneglycol, propyleneglycol, triethyleneglycol), trimethyleneglycol) are recommended as plasticizers of special merit for cellulose acetate, cellulose acetate-propionate, and similar cellulose derivatives in lacquers. 947

PRINTERS' ROLLERS COMPOSITION

—A new composition for printers' rollers
consists of glycerin, magnesium chloride,
potato starch, and a stabilizing additive, such
as ammonium bichromate, potassium permanganate, or manganese dioxide.

948

SOLID LUBRICATING GREASE-Lubricating grease in solid form is being produced with a base of castor oil by means of a newly discovered process.

WASTE LEATHER PRODUCES COLORS—Colors produced from waste leather have been tested with promising results. Rich browns, bluish and black pigments have been obtained.

CITRUS MEDIUM FOR PENICILLIN—Developments in penicillin manufacture continue to furnish research results of value to other industries. For the surface culture method it is desirable to have a culture medium which is a solid jelly at the beginning and which later becomes a fluid. Citrus pectate pulp makes this possible. While application in penicillin manufacture is limited, the value of such a medium is not restricted to this product, and it may be found to improve the technique for other commercial microbiological processes.

SABADILLA SEED INSECTICIDE— Use of sabadilla seed, a species of lily, as an insecticide shows promising results. Tests were made against the most common cropdamaging insects, and in comparison with insecticides prepared from rotenone, pyrethrum or arsenicals, and in one instance, DDT. Sabadilla seed has been used as a medicinal and for the destruction of body vermin for years.

GERMICIDAL FLOOR FINISH—A floor finish incorporating a powerful germicide is now being manufactured which will kill typhoid and other similarly resistant disease-causing germs within five minutes of application. The finish is said to be non-toxic, is composed of wax with the germicide added in such a way that its presence is unnoticeable.

953

NEW BACTERICIDAL - Research on hitherto untested lichens indicate that they contain substances which, like penicillin, have the power to inhibit the growth of bacteria. 60 out of 118 tested species have been found to contain antibiotic substances.

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation 110 East 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.

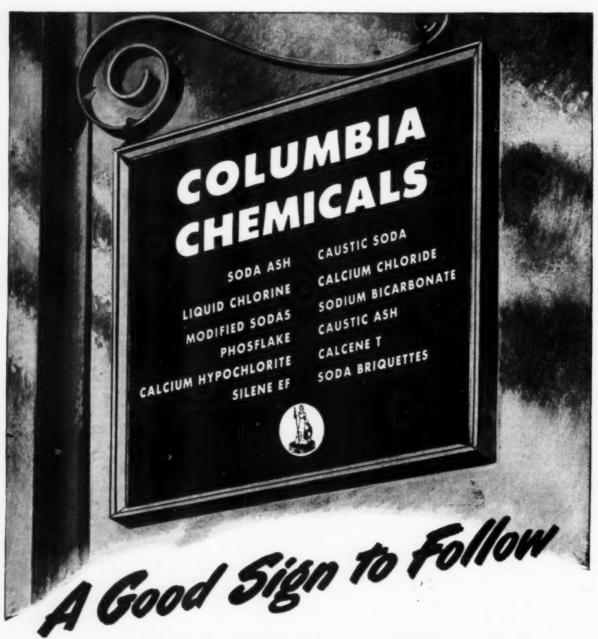
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and it's an idea every carton user will want to grab who's looking for extra sales, in tomorrow's open displays and self-serve stores





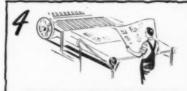
making a package stand out, catch eyes . . . say, "Take me home." Pick up or impulse sales already add up to over 50% of the volume in thousands of stores. And this help-yourself, reech-for-it trend is headed UP. Tomorrow, your folding carton will need the extra attention it can get—with Coated Lithwite.



ON COATED LITHWITE CARTONS, colors show up more brilliantly. For the surface of this revo-lutionary, one-process coated board is unusu-ally white. Uniform. Hard. Smooth. Free from chalkiness. It forms a perfect base for plates and inks. It reproduces product illustrations with a sharp realism that gives a buying urge.



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With postwar competition promising to be keener than ever before, many of us face the fact that *now* is the time to consider our methods, our packaging appeal, our operation to assure superior products in every way.

# We believe we can help you

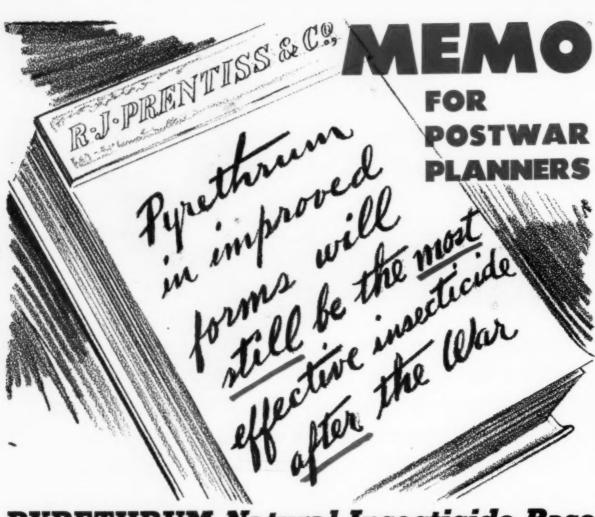
We have developed improvements in methods of processing and packing. Our engineering and research staffs may point the way to lower cost production for you as they have for other manufacturers. There is no charge for this service. Our experience these past forty years has resulted in many ingenious containers for Uncle Sam and American manufacturers. Perhaps, working closely with you, we may develop some profitable postwar merchandising plans for you. All this is part of our service to customers.

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is doing a big job for our armed forces. Every pound that can be made available is being used to protect our men on every front—which will continue to be the case for some time.

However, when both the war picture and the supply picture improve, there will be a chance for the trade to get acquainted again with the NATURAL INSECTICIDE BASE—Pyrethrum, and its improved forms.

R. J. PRENTISS AND COMPANY has not forgotten Pyrethrum, either. The Prentiss laboratories are constantly at work on new and better Pyrethrum compounds to put on the market after the war. Keep in touch with R. J. PRENTISS!

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# Official Test Insecticide . . .

Supplies of the 1944 Official Test Insecticide for evaluating insect sprays by the Official Peet-Grady Method are available from the office of this Association. The 1944 O.T.I. is priced at \$5.00 per dozen six-ounce bottles, plus shipping costs, to members of this Association. To others, there is an additional service charge of \$1.00 per dozen. Single bottles are \$1.00 each. Check with order is required.

The 1944 Official Test Insecticide is required for all official testing of insect sprays by the Peet-Grady Method for the period from June 1, 1944, through May 31, 1945.



# National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street

New York

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# REITERATION

During this period when pyrethrum has been and continues to be practically unavailable for normal uses, we have done our best to make clear our belief that its value and importance to the household insecticide industry are greater than ever. Many technical advances have been made, with more in prospect, but up to now none has seriously challenged the position of pyrethrum or duplicated its unique advantages.

Nor is there any secret as to the basis for this continued belief in pyrethrum. We are confident that when the present emergency is over and there is no longer the necessity of using whatever materials are at hand, all household insecticides must, can and will meet new standards of really complete safety to users under any and all circumstances and complete freedom from objectionable characteristics. In these respects pyrethrum still stands alone.



# Dodge & Olcott Company

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# at El Alamein.. Naples.. Cherbourg.. Aac

## Typhus fever-dread and deadly-

spawns on filth and rides rampant on the tides of war in Europe, Africa and the South Pacific. Its carrier: millions of tiny body lice which pass from person to person, spreading infection like wildfire.

Against this ravaging louse menace to our fighting forces, the Army has turned a remarkable new "military" insecticide, "DDT" (Dichloro-diphenyl-trichloroethane). Dusted into the clothing, bedding, tenting, as a powder, this organic chemical provides anti-louse protection for about a month. In Naples its mass use on a plagued civilian population helped bring Typhus into control from epiden.ic proportions.

So spectacular are the results of "DDT" that exuberant hopes for its effectiveness against other disease-bearing and pest insects which attack man, animals, and plants have been raised even among those in professions noted for conservatism. And further experiment is already re-wealing other significant applications for it. . . .

"DDT"...a tonnage product by General Chemical Com-pany. Long a major producer of a broad range of pany. Long a major producer of a broad range of nationally-known insecticides, as well as industrial and laboratory chemicals, General Chemical has been pro-ducing tonnage quantities of "DDT" for several months at the urgent request of the Government. That we were able to swing into mass production of this new product in an unusually short time reflects the skill and expe-siones of our Baker & Adamson Division cained in wears rience of our Baker & Adamson Division gained in years of producing commercial lots of special quality chemi-cals "on order" for industry.

Our entire output of "DDT" is now devoted exclusively to needs of the Armed Forces. However, study of the product and development of everyday applications for it go forward at General Chemical laboratories. There, this research is in the hands of scientists whose "know-how" has brought forth the many significant organic and inor-ganic insecticides for which General Chemical is known wherever food crops are raised.



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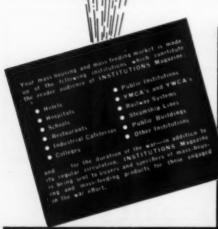
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#### SECTION

Official Publication National Association of Insecticide & Disinfectant Manufacturers

HERE DDT is going to fit in the post-war insecticide picture is much discussed these days. And opinions indicate two schools of thought. One apparently feels that production of DDT will be cut drastically after the war when present heavy consumption by the armed forces terminates. The other seems to hold that largescale insect control operations for the protection of civilian populations especially from mosquitoes will be expanded and may require more DDT than even present warswollen production can supply. Both schools agree that DDT is destined to play an important role in post-war insect control. Therefore it would seem that the kind and extent of this control represents the difference of opinion, whether the annual use of DDT will be only a few million pounds or as some appear to believe, may rise as high as fifty million pounds.

OR using the term, "heavy duty," in connection with a floor wax, and for including the claims, "long lasting" and "durable," a manufacturer has recently been cited by the Federal Trade Commission. Off hand, this looks like the same old hair-splitting in which the FTC has indulged for years. It is the type of activity which probably accounts for the Reece Bill (H.R. 2390) aimed to amend the Wheeler-Lea Act and clip the Commission's wings. On a comparative basis in floor waxes, we cannot see where the term, "heavy duty," if it describes a wax with high carnauba content, is something for the FTC to become excited about. The fact that FTC would take the

trouble to issue a cease and desist order in a case like this,—even if instigated by a competitor as such usually are,-gives us a slight pain in the neck.

O REQUIRE full formulas of insecticides on package labels entails many complications, few of which are ordinarily appreciated by state legislatures which write such requirements into the law. The current controversy in Oregon is an example, a new proposed insecticide law sans formula disclosure having been killed in committee, leaving an old law with such a requirement still in force. It would appear that many agricultural insecticide makers and marketers do not oppose such disclosure, in fact, some advocate full formulas on labels. Among household insecticide manufacturers, however, the opposition is practically unanimous, some objecting so

Always, we have viewed compulsory formula disclosure on labels as permitting and inviting the chiseler and imitator to steal the brain-child of manufacturers who have spent much time and money on research, of forcing a manufacturer to give valuable information to his competitors. We still feel that the public is fully protected by filing formulas with enforcement officials, and to this, few if any household insecticide manufacturers object. If some agricultural insecticide manufacturers desire to put the full formula on a label, it is their privilege, but

strongly that they will not market their goods in any state having such a label re-

why force it on others making entirely dif-

quirement.

## The Formulation of

#### PHENOLIC DISINFECTANTS

By Paul A. Wolf\*

The Dow Chemical Company

SEARCH of the literature for the germicidal effectiveness of various phenol derivatives will reveal differing values for practically any given phenol. This variation is not surprising when one considers that such factors as organic matter, pH, test conditions and the presence of detergents may cause large variations in phenol coefficients. The facts, isolated, as they are in the literature, are sometimes confusing and it is not surprising that the manufacturer of phenolic disinfectants can not always take advantage of the optimum conditions for obtaining maximum germicidal effectiveness.

That the phenol coefficients of different phenol derivatives vary quite widely is common knowledge to those in the disinfectant business. Suter (1) has published an excellent review to show the relationship between the structure of phenols and their germicidal effectiveness. Although the conclusions reached by Suter are valuable as a guide in the search for new phenolic germicides, it is assumed that the manufacturer of disinfectants is more interested in obtaining the maximum germicidal potency from the compound with which he is working.

A careful consideration of reports in the literature dealing with germicides will indicate that the following factors are the most important in contributing to the germicidal effectiveness of a disinfectant formulation:

- 1. The ratio of detergent to germicide.
- The germicidal properties of the soap itself.
- The degree of dissociation of the phenol under the test conditions which is in turn related to the pH of the test solution.
- 4. The alkalinity of the soap, and

\* Address before 31st Annual Meeting, Nat'l Assn. of Insecticide and Disinfectant Mfrs., New York, Dec., 1944.

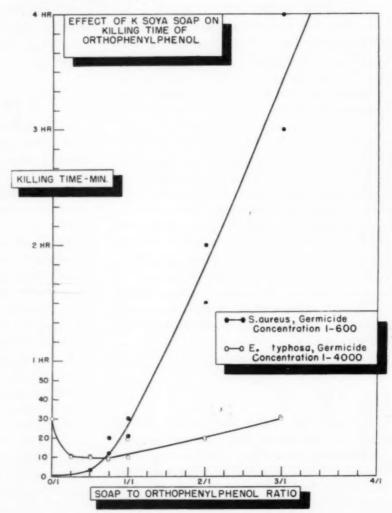


Table 1

#### 5. The presence of organic matter.

The manufacturer of disinfectants at first glance might draw the conclusion that these points are rather academic and of little practical value. However, a closer study and analysis of these factors will demonstrate quite the reverse, that every manufacturer should consider the manner in which a germicide is formulated as closely as he evaluates the price and bactericidal properties of any new compound appearing on the market.

#### Effect of Soap on Germicidal Properties of Phenols

HAMPIL (2) found that sodium oleate, sodium myristate, potassium palmitate and potassium stearate

had a marked inhibitory action on the bactericidal properties of phenol, metacresol, secondary-butylphenol and normal hexyl resorcinol. These tests were made at a soap to germicide ratio much greater than one. Frobisher (3) reported similar findings with regard to sodium oleate and hexyl resorcinol, although when the soap to toxicant ratio became less than one, an enhancement in the germicidal potency of hexyl resorcinol took place. Tilley and Schaf-

gents. Sodium resinate and laurate were particularly active in this respect. This enhanced activity was obtained even with soap to germicide ratios of 5 or 10.

Ordal, Wilson and Borg (6) reported that the addition of detergents to phenols in most cases increased the germicidal properties of the phenol in question. The pH of the test solutions was carefully controlled and the effect was found to depend upon the wetting

EFFECT OF SOAP ON KILLING TIME OF 2-CHLORO 4-PHENYLPHENOL S. aureus, Germicide Concentration 1-2000 E. typhosa, Germicide Concentration 1—6000 KILLING TIME - MIN. K Castor Soap LHR 50 40 30 Synthetic Detergent 20 10 SOAP TO GERMICIDE RATIO Table 2

fer (4) in their investigations found that coconut, castor, or linseed soap in a ratio of two parts of phenol to one part of soap increased the activity of the phenol particularly in the absence of organic matter.

Halvorson, Bayliss, Ordal and Wilson (5) found that the activity of certain substituted phenols was enhanced by soaps and synthetic deteragent added as well as the relative concentrations of the phenol and detergent. In a later study, Ordal and Deromedi (7) found that the enhancing effect of soap upon a phenol was largely dependent upon the pH at which the study was made.

Cade (8) reported that "Phenols are materially aided in their germ killing power by the addition of soaps up to a certain concentration, after which the addition of more soap materially reduces the germicidal power. Furthermore, different soaps have different effects in this regard, whereas different phenols with the same soap show similar effects. There appears to be an optimum range where each soap works best."

Ordal and Deromedi (7) have further explained the soap effect on phenols. They stated that "The addition of an alkaline solution of a wetting agent, such as a soap to the unbuffered solution of a phenol will in general result in an increase in ionization of the phenol with a resultant decrease in germicidal activity of the phenol." However, this action may not occur, for, the wetting agent may be germicidal in itself or it may affect the pH of the solution so that the phenol becomes more active.

Germicidal potency occurs then as a resultant of several interrelated factors. With these considerations it is remarkable that the literature agrees as closely as it does!

From a practical standpoint, the disinfectant manufacturer must be especially interested in the soap effect upon germicidal potency when tested under conditions similar to those recommended for use. For this reason, usable concentrations of orthophenyl phenol, and 2-chloro-4-phenylphenol have been tested in the presence of varying concentrations of soap. The pH has been controlled by buffers while only the germicide to soap ratio was varied. Tables 1 and 2 illustrate how the killing time increases markedly as the soap to germicide ratio increases. The effect is not so noticeable in the case of the test organism Eberthella typhosa as it is with the organism, Staphylococcus aureus.

These results indicate that the manufacturer of phenolic disinfectants can in general obtain the greatest germicidal effectiveness by keeping the soap to germicide ratio as small as practicable, preferably a ratio of one to one or less.

#### The Effect of the Soap Itself on Germicidal Effectiveness

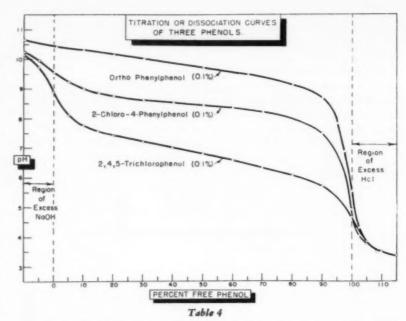
M ENTION has already been made of the fact that certain soaps are more germicidal than others. Coco-

nut oil soap, the unsaturated fatty acid soaps, sodium oleate and sodium resinate, potassium laurate and potassium castor soap have been cited in the literature as particularly desirable from a germicidal viewpoint. Bayliss alone (9) has investigated 27 chemical constituents present in soaps.

Unfortunately those soaps which have desirable germicidal properties are many times undesirable because of the added cost factor or difficulty involved in the production of a stable formulation from a physical standpoint. In cases like these, the manufacturer can profit by choosing the right proportion of the so-called "germicidal" soap along with the effective solubilizing type soap. Potassium soya oil soap and potassium stearate belong to the class of soaps which are particularly effective in the solution of phenols. Table 3 illustrates this difference in stability of 1 per cent solutions of similar formulations differing only in the soap used in the mixtures. A formulation containing potassium castor soap, for example, can be diluted (1 part + 99 parts water) and upon exposure remains stable for 48 hours while a similar potassium coconut formulation, exposed under the same conditions, becomes cloudy and phenol begins to precipitate in 24 to 48 hours.

Table 3 also indicates the variation in phenol coefficients one can expect from the use of various soap bases with a given phenol (orthophenylphenol) even when the soap to germicide ratio is kept constant. The pH values of 1 per cent solutions of the various formulations fell within the range of pH 10.0 to 10.2 so that the pH effect on germicidal potency of phenols did not interfere in the fests.

The effect of the soap itself on germicidal effectiveness is an important



factor to be considered by the manufacturer particularly at the present time of soap shortages and frequent changes in soap bases. In many cases, differences in germicidal potency may result from soap changes and not because of so-called variations in the germicide. If possible, it is therefore an advantage for the manufacturer to determine the effect of changing the soap base on the phenol coefficient of his disinfectant. A soap which appears to be a bargain when considered on the cost per pound basis may not be so when evaluated on the basis of cost per unit of germicidal potency as used in a formulation.

#### Effect of pH on Germicidal Properties of Phenols

In general, it can be stated that an increase in hydrogen ion concentration leads to an increase in germicidal properties. Degering, et al. (10) have shown this to be true for a large number of germicides, although many of the cationic type germicides are

markedly inactivated at a lower pH range. For example, it has been observed in this laboratory that a germicidal cationic type compound was only one tenth as active at pH 4.5 to 5.0 as at pH 7.

In the case of phenols the statement is true without exception, that a decreased pH favors germicidal action. An increase in H<sup>+</sup> concentration causes the following equilibrium to shift to the left:

$$R - \bigcirc -OH \longrightarrow (R - \bigcirc -O-) \longrightarrow H^*$$

Osmotic pressure measurements have shown that the undissociated phenol can penetrate bacterial cell walls more rapidly than the corresponding ion; hence this may be the reason for the correlation between changes in pH and germicidal action.

The pH range over which the germicidal activity of a phenol changes most rapidly varies with the dissociation constant of the phenol. A measure of the relation of pH and dissociation is expressed as the pKa value, which is approximately the pH at which one-half of the phenol is dissociated.

The idea which the pKa term represents is a practical one which should be considered in the evaluation of a phenol for disinfectant manufacture. For example, one can see from Table 4 that 2,4,5-trichlorophenol at

Table 3. Soap Effect on Phenol Coefficient.

Germicide	Soap	Physical Stability	Phenol Co	efficients
Conen. %	Conen. %	at 1%	E. typhosa	S. aureus
15	10 K Coconut	PPT, 48 hours	7	6
15	10 K Castor	OK, 48 hours	7	5
15	10 K Linseed	Cloudy, 24 hrs.	6	5
15	10 K Soya	Cloudy, 24 hrs.	5	4
15	10 K Cottonseed	Cloudy, 24 hrs.	5	5
15	Sulfonated			
	Peanut Oil	PPT, 48 hours	4	2

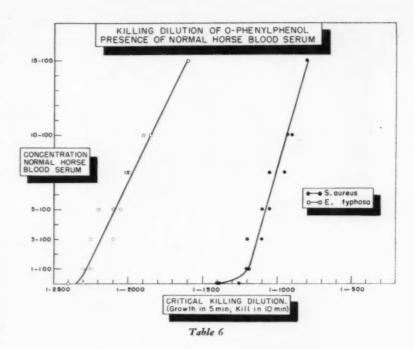
a concentration of 0.1 per cent has a pKa value of about 6.8 (point of 50 per cent dissociation). Furthermore, at pH 9 the phenol exists practically completely as the ionized phenolate while at pH 5 there is hardly any dissociation of the free phenol at all. Knowing these facts one should be doubtful of the germicidal effectiveness of this compound when formulated in an alkaline soap mixture. Actual experimental data (table 5) show that this doubt is well founded; for at pH 6.1, 2,4,5-trichlorophenol has a phenol coefficient of 41 while at pH 10 or above the phenol coefficient value has dropped to about 4. On the other hand, ortho-phenylphenol with a pKa value of 10 can be formulated in alkaline soap mixtures with relatively little effect on its germicidal properties.

From a practical standpoint, the class of phenols which have a relatively high pKa value also remain active germicidally at a higher pH range than those having a low pKa value; for the former group of phenols tend to remain undissociated until relatively high pH ranges are obtained.

The manufacturer should consider this factor in view of the properties of the formulation he plans to produce and the field of application for which he intends to recommend his product.

#### Effect of Organic Matter on Germicidal Properties

RECENTLY Klarmann and Wright (11) published data which emphasize the effect of organic matter upon the germicidal efficiency of various type germicides. These authors found that the loss of potency of a given germicide in the presence of 10 per cent horse serum was a function of the phenol coefficient and was



not characteristic of various type germicides, e.g., phenols, cationic or anionic detergents, and mercurials.

The criticism may be justified that the testing of a germicide in the presence of 10 per cent horse serum is more rigorous than the conditions generally met in actual use. In any event, a most important factor in judging the effect of organic matter is the rate of change in germicidal potency in the presence of very small but increasing concentrations of organic matter. For example, tests in which the pH was controlled indicate that the germicidal efficiency of orthophenylphenol (table 6) decreases relatively slowly as the organic matter increases. 2 - chloro - 4 - phenylphenol, (table 7) on the other hand, is activated to a marked degree under similar test conditions while chlorinated orthophenylphenol (table 8) seems to lie

between these two extremes in its rate of change in germicidal effectiveness in the presence of increasing concentrations of horse blood serum.

The inactivation of germicides by organic matter is an important consideration in the evaluation of a bactericide for disinfectant formulations. The manufacturer must realize that the high phenol coefficient values obtained under ideal conditions may be out of line with results obtained in tests more nearly simulating conditions of use. Once he is familiar with the relationship between germicidal inactivation of his product and organic matter, adequate steps can be taken to compensate for lost activity under "use" conditions.

#### Considerations in Evaluating Results in the Literature

SINCE such factors as pH, soap to germicide ratio, the chemical make up of the soap, organic matter, test organism and even substrains (12) of a particular strain contribute to the phenol coefficient values one obtains in a given test procedure, it is imperative in the interpretation of any work in the literature to know to what extent the variable factors have been controlled. Otherwise, it is difficult to judge the significance of the published

Table 5. 2,4,5-Trichlorophenol. Phenol Coefficient at pH 6.1 and pH 10-12.

Test Organism: E. typhosa.

	pH 6.1	pH 10-12
Phenol Control	1:90+	+
	1:100+++	+++
Compound Dilutions	1:3250	1:300
	1:3500	1:400
	1:3750+	1:500+++
	1:4000++-	
	1:4250+++	
	3750	400
	Phenol Coef. — = 41	Phenol Coef. — = 4
	90	90



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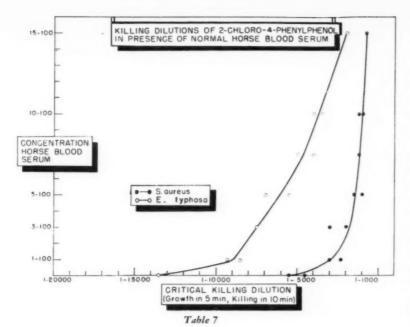
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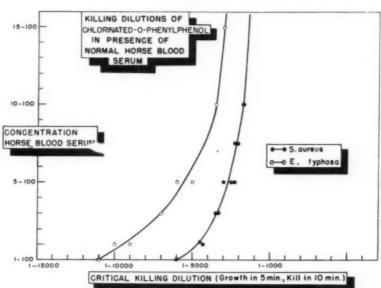


Table 8

results. For example, some of the early work on the synergistic or inhibitive effect of soap on the germicidal potency of different germicides is incomplete and sometimes in error since the soap to germicide ratio and other variable factors were not properly controlled.

The effect of pH and organic matter upon germicidal potency has been confused in some of the early work on germicides. 2,4,6-Trichlorophenol is a compound which can be used to illustrate this point. The

phenol coefficient procedure was used in the determination of the critical killing dilutions of this compound against S. aureus. The pH was controlled in each case by the use of phosphate buffers. Twenty-four hour cultures of the organisms were autoclaved to serve as a source of organic matter.

A study of the results (table 9) shows that at a given pH there was a slight decrease in germicidal activity in the presence of organic matter represented by the killed cultures. However, a comparison of these results with the killing time obtained at pH 10 shows that the inactivation by organic matter is not nearly as marked as that brought about by an increase in pH in the absence of organic matter. One can readily see how the effect of pH might have been mistaken for other factors in the absence of proper pH readings.

In conclusion, it can be seen that the production of a successful disinfectant formulation includes something more than merely mixing a germicide, soap and other components in "cookbook" fashion. There are many factors which contribute to the germicidal potency of the product, and furthermore, these factors are interrelated. Therefore, it is imperative that the manufacturer consider not only costs in his evaluation of a new germicide, but also the conditions under which it is to be used and finally the manner in which he can use the compound in a disinfectant to obtain maximum germicidal value.

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(Turn to Page 141)

Table 9. Killing time of 2,4,6-Trichlorophenol in Presence of Organic Matter.

	Critic	S. at	ing Dilution reus 6.0	ons pH 10
Regular Test	1:1500.	1:1500.	1:1500	1:100
0.5 ml. killed 24 hr. culture 1.0 ml. killed 24 hr. culture	1:1250,	1:1250,	1:1250	* *



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# Dispersants for Aerosols

#### By Lyle D. Goodhue, J. H. Fales, and E. R. McGovern

Bureau of Entomology and Plant Quarantine, USDA

OR the production of insecticidal aerosols by the liquefied-gas method (1, 2), (dichlorodifluoromethane) ("Freon-12") is the most satisfactory gas if the aerosols are to be used in the presence of man and animals. Although a rather poor solvent for many insecticides, it is nontoxic, nonflammable, inert, and odorless, and has a vapor pressure suitable for the production of aerosols.

Aerosols of pyrethrum and sesame oil produced by this gas have been in great demand by our armed forces. "Freon-12" was formerly in large commercial production for refrigeration purposes, and the existing facilities for its manufacture could hardly keep abreast of the demand for both purposes. The shortage stimulated research to find a substitute for it or some diluent to extend the supply.

Although there are numerous liquefiable gases, only a few can be used for aerosol production in the presence of man. Usually some one property disqualifies the gas. It may be toxic or irritating to man; it may be explosive, a poor solvent, or chemically active; or it may have the wrong vapor pressure. If the aerosol is not to be used in the presence of man or animals in a confined space, a few more gases are available to choose from. Flammable gases having other good properties can be used to dilute "Freon" short of the point of flammability.

The blending of two liquefied gases is not an easy procedure for the manufacturer, especially when one gas is flammable or when the gases differ widely in density or boiling point. However, if the saving in cost or of critical material is great enough, ways

will be found to overcome the difficulties.

The physical and chemical properties of several gases, and the results of entomological tests on aerosols produced by some of them, are given in the following paragraphs and in table 1. The preparation of the solutions and the testing of the aerosols against houseflies have been described previously (3). Briefly, the tests on insects were made by releasing them in a Peet-Grady chamber and then spraying a measured quantity of aerosol into the chamber. The houseflies

were exposed to the aerosol for 15 minutes, and then collected and placed in clean recovery cages with food. Mortality counts were made I day after treatment.

The aerosol formulas used in these tests were variations of the standard formula-2 parts of pyrethrum (pyrethrins 20 per cent), 8 parts of sesame oil, and 90 parts of "Freon-12" -in which the "Freon" was replaced, at least in part, by another liquefied gas. The solutions were made up by weight, but since the dispensing apparatus was calibrated volumetrically all

Table 1. Toxicity to houseflies of aerosols produced by various liquefied gases substituted for "Freon-12" in the formula pyrethrum (pyrethrins 20 per cent) 2 parts, sesame oil 8 parts, and "Freon-12" 90 parts by weight.

		-	
Liquefied gas	Quantity	Pressure at 80°F.	Mortality <sup>2</sup> in 24 hours
	Parts by weight	Lb. per sq. in.	Per cent
Experiment 1:			
Butane	36	39	31
Propane	34	140	48
Butane + propane	17.5 + 17.5	91	58
Freon-12 (check)	90	86	44
Experiment 2:2			
Butane + Freon-12	7 + 72	79	42
Propane + Freon-12	7 + 72	106	53
Freon-12 (check)	90	86	47
Experiment 3:			
Dimethyl ether	50	70	28
Dimethyl ether + Freon-12	10 + 72	80	29
Freon-12 (check)	90	86	23
Experiment 4:			
Methyl chloride	62.3	70	76
Methyl chloride + Freon-12	12.4 + 72	80	74
Freon-12 (check)	90	86	72
Experiment 5:			
Freon-22	83	150	75
Freon-12	90	86	79
Experiment 6:			
	$10 \pm 80$	80	45
Methylene chloride + Freon-12	20 + 70	72	61
	30 + 60	64	57
Freon-12 (check)	90	86	62

<sup>1</sup> The dosage of pyrethrins was 18.5 mg. per 1000 cubic feet in experiments 1, 3, 5, and 6 and 37 mg, in experiments 2 and 4.

The mortalities in experiments 1, 2, and 6 are averages of 6 to 10 tests, and in experiments 3, 4, and 5 averages of 2 or 3 tests.

This experiment was run on a different date with more resistant flies than ex-

## . . . . announcing

## HANDBOOK of PEST CONTROL

By Arnold Mallis

HIS new book, copies of which will be available about May 1, is a thoroughly practical, complete and up-to-date study of pest control which will be found invaluable to every insecticide manufacturer, pest control operator and entomologist.

Approximately 570 pages in length, and containing 140 illustrations, it deals in a practical way with the behavior, life history and control of household pests, including flies, mosquitoes, roaches, bedbugs, beetles, termites, bees, rodents, wasps, lice, fleas, spiders, mites, ticks, moths, ants, silverfish, psocids, etc. While there have been other books in this field, Mr. Mallis' book is by far the most com-

plete and up-to-the-minute practical text on the subject. It reflects insecticide developments as recent as those of the past few months, carrying for instance, the most recent findings on DDT, aerosol insecticides, insect repellents, etc. The emphasis throughout is on control measures, and the author covers fully all the commonly used insecticide materials and treatments. Fumigation is the subject of a special chapter.

An unusually complete list of references to the literature on household pests, insecticides and their use adds considerably to the value of Mr. Mallis' new book. Hundreds of references to the technical literature are listed.

HANDBOOK OF PEST CONTROL has standard high-grade book binding, cloth and board covers, 6 x 9. Priced at \$6.00 per copy. Check must accompany order. Orders for books to be sent on approval cannot be accepted, but the usual return privilege will be accorded where copies are returned unmarred within 10 days. Owing to present conditions, the first edition must be limited. Accordingly, an early order accompanied by check is suggested.

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solutions in the liquefied gases were made to contain the same amount of insecticide per unit volume.

#### Propane and Butane

PROPANE and butane are available at low cost either alone or as blends in almost any proportion. Pure propane has a gage pressure of 128 pounds per square inch at 80° F. and produces a good aerosol. The pressure of butane, 23 pounds per square inch, is too low to produce a good dispersion, but butane blended with propane to give a higher pressure is very good. As liquids these two compounds are not good solvents (except for oily materials); moreover, they are highly flammable. They have a very low toxicity to man (7).

Although these hydrocarbons are too flammable to be used alone, they can be mixed with "Freon-12" up to the limit of flammability. A blend of equal parts by weight of butane and propane, which has approximately the same pressure as "Freon-12," appears to be most practical from a manufacturer's point of view. Slightly over 20 per cent of the "Freon-12" can be replaced without giving a flammable mixture.1 The density of such a blend is 0.52 gram per milliliter at 80° F., whereas that of "Freon-12" is 1.303 grams. Substitution on a volume basis would therefore reduce the weight of an aerosol solution.

Two experiments were conducted with aerosols produced by these hydrocarbons. In the first experiment the effect of pressure was studied. The butane-propane blend, with a pressure near that of "Freon-12," gave the aerosol resulting in the highest kill. Since these three gases are nearly identical in physical properties except for pressure, the optimum pressure seems to be above 39 pounds per square inch. This pressure is probably operative not only in discharging the liquid from the container but also in the subsequent formation of drops.

In experiment 2 the effect of replacing part of the "Freon" by butane or propane was studied. These hydrocarbons also give satisfactory results when only 20 per cent by volume (7 parts by weight) of the "Freon" is replaced by hydrocarbon, but propane, with a higher pressure, is more effective than butane.

#### Dimethyl Ether

IMETHYL ether is an easily liquefied gas, boiling at -9.6° F. and having a gage pressure of 70 pounds per square inch at 80° F. It is a very good solvent for many organic insecticides, especially DDT, and is nontoxic to animals at much higher concentrations in air than is necessary to produce an aerosol. It is being used experimentally to produce aerosols of plant hormones for stimulation of setting and production of seedless fruit (4). It is highly flammable and is therefore impractical for general aerosol use unless it is mixed with "Freon-12." About 25 per cent of the "Freon" can be replaced by it without giving a flammable mixture. It is much less expensive than "Freon" and can be used if blending is economically practicable. This gas, alone or mixed with "Freon-12," produces an aerosol that is at least as effective against flies as that produced by "Freon-12" alone.

#### Methyl Chloride

XCEPT for its toxicity to man and animals (6), methyl chloride has been found to be, next to "Freon," the most suitable liquefied gas for aerosol production. It boils at -10.7° F. and has a gage pressure of 70 pounds per square inch and a density of 0.9 gm. per milliliter at 80° F. It is a good solvent for nearly all organic insecticides, especially DDT. It will react with nicotine and some other compounds, but generally it is inert. Its flammability range in air is 8 to 17 per cent by volume. Not even the lower limit is ever reached in the formation of an aerosol. It is less expensive than "Freon-12."

Methyl chloride, alone or with "Freon-12," appears to produce an aerosol as efficiently as "Freon-12" alone. When some of the samples were heated at 140° F. for 16 days to determine the effect of methyl chloride on pyrethrum, a slight increase in the kill was obtained, but it was not

enough to indicate any chemical change.

When carefully controlled, aerosols produced by methyl chloride can be used in the presence of man. One large factory (27 million cubic feet) was treated very successfully while work was in progress. However, the toxicity data on methyl chloride are still meager, and it is not safe for general use in closed spaces even though only 0.02 per cent in air is required to produce an aerosol. Hazards would also arise from any mishandling or accidents that would produce a high concentration.

Methyl chloride is an excellent propellant gas for aerosols to be used against insects out of doors, as in the treatment of truck crops. It can also be used in the greenhouse to apply insecticides that are in themselves toxic to man. It does not injure plants in the concentrations used.

#### Chlorodifluoromethane and Chlorofluoromethane

CHLORODIFLUOROME-THANE, known as "Freon-22," has properties similar to those of dichlorodifluoromethane ("Freon-12") except that its boiling point (-41.5° F) is lower and its pressure at room temperature is consequently higher (150 pounds per square inch). It has a density of 1.19 gram per milliliter at 80° F. It is also nonflammable and nontoxic. At present it is more expensive than "Freon-12." "Freon-22" produces an aerosol having about the same toxicity to houseflies as that produced by "Freon-12."

Chlorofluoromethane is another one of the "Freon" series ("Freon-31"). It has a boiling point of -15.8° F. and a gage pressure of 40 pounds per square inch at 80° F. It is a good solvent, and is relatively nontoxic and nonflammable. It would appear to be an excellent solvent-propellant for aerosols, except that the aerosol is very coarse. It therefore settles very rapidly and has little action on insects. When this gas was substituted for "Freon-12" in the aerosol formula, only 2 per cent kill was obtained on houseflies even when twice as much pyrethrum was used as in the standard formula. The

<sup>&</sup>lt;sup>1</sup> The limits of flammability of propane, butane, and dimethyl ether, each in mixtures with Freon-12, were determined by G. W. Jones, Explosives Division, Central Experiment Station, U. S. Bureau of Mines, Pittsburgh, Pa.

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same material in "Freon-12" at the same dosage killed 42 per cent. Although low pressures do not produce good aerosols, some other factor, such as surface tension or viscosity, appears to accentuate the poor properties of chlorofluoromethane.

Carbon Dioxide and Nitrous Oxide

ARBON dioxide has not been tested extensively as a propellantsolvent for aerosols. One important drawback is that pyrethrum extract is only slightly soluble in liquid carbon dioxide. In addition, the vapor pressure of this gas is so high that it is difficult to handle with ordinary equipment. A high-pressure tube with "Lucite" windows was used to determine the solubilities of some insecticides. Some combinations using acetone and liquid carbon dioxide with insecticides were satisfactory, but others could not be used because the "Lucite" was dissolved. About 16 per cent by weight of carbon dioxide in acetone gives a pressure of 300 pounds per square inch and produces a rather wet, flammable spray. The low cost of carbon dioxide is its greatest advantage, and adjustments to the undesirable properties would appear to be worth while in some cases.

Some entomological tests were made on aerosols produced with carbon dioxide. In one test 2 per cent of pyrethrum (pyrethrins 20 per cent), 8 per cent of sesame oil, 40 per cent of acetone, and 50 per cent of kerosene was used under 300 pounds of carbon dioxide pressure. A dosage of 6.92 grams of this solution per 1000 cubic feet killed 66 per cent of the flies in the test room. Six grams of the standard "Freon-12" aerosol with the same amount of pyrethrum and sesame oil gave 78 per cent kill under the same conditions.

Nitrous oxide also has a pressure too high for it to be practical as a propellant unless mixed with some low-pressure solvent. It is nonflammable but will support combustion.

#### Solvents Liquid at Room Temperature

A LTHOUGH methylene chloride is liquid at room temperature, it is easily volatilized and can be used

as a diluent for "Freon-12." It boils at 104° F., is practically nonflammable, and has recently been found to have a very low toxicity to animals (5). It is an excellent solvent for many organic insecticides, including DDT and rotenone, and can be used as an auxiliary solvent to make these insecticides more soluble in "Freon-12." The pressure of the "Freon" solution is lowered by addition of methylene chloride.

The toxicity to houseflies of aerosols produced by methylene chloride and "Freon-12" in various proportions is indicated in the table. The use of 20 parts by weight in the formula, resulting in 20 per cent substitution of the "Freon-12," gave a mortality substantially equal to the standard. As much as one-third of the "Freon" used in the standard formula can be replaced by methylene chloride without any significant reduction in mortality. Other solvents can be added to "Freon-12" as diluents. Not many have actually been tested. Unless the solvent is highly volatile, as is methylene chloride, the particle size of the aerosol is greatly increased and the insecticide is applied as a wet spray. Kerosene, for example, increases the particle size proportionately much more than does methylene chloride. Other properties of the solvent, such as surface tension, viscosity, and heat of vaporization, also affect the degree of dispersion. Acetone, which has about the same volatility as methylene chloride, gives a much coarser aerosol.

#### Summary

S A propellant for aerosols used in the presence of man dichlorodifluoromethane ("Freon-12") appears to be the most satisfactory. Other liquefied gases were studied as substitutes or diluents for "Freon-12." These include propane, butane, dimethyl ether, methyl chloride, chlorodifluoromethane, chlorofluoromethane, carbon dioxide, and nitrous oxide. As a diluent for "Freon-12" and a solvent for insecticides, methylene chloride appears to be most practical. This diluent is practically nontoxic and nonflammable. It is an excellent solvent for insecticides. It is liquid at room temperature, but even with its low volatility it can be substituted for "Freon-12" up to one-third of its weight without reducing the effectiveness of the aerosol.

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#### Disinfectant for Barber's Use

A disinfectant mixture of formalin, glycerine and water is recommended for use in barber shops. It is designed to meet the regulations of the state of New Jersey that any barber tool or part that comes in contact with the head, face or neck of a patron must be disinfected before use again. The preparation is made by combining two parts of a 25 per cent solution of formalin with 5 parts of water and 1 part of glycerine. Articles should be left in the solution at least five minutes for disinfection, and rinsed before use. Glycerine Facts, February, 1945.

#### Mosquito Repellent

The dextro-alpha-pinene fraction of juniper oil from Juniperus seravschanica, either alone or dispersed in water with "Lysol" or naphthalysol is an effective mosquito repellent. Its application to mosquito netting greatly improves the latter's effectiveness. D. I. Blagoveschchenskii, N. G. Gregetova and A. S. Monchadskii. Doklady Aka. Nauk S. S. S. R. 40, 135-8; through Chem. Abs.



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# Roach Repellent Cement

By Frank O. Hazard

Wilmington College

FEW years ago Dean S. Hubbell of Mellon Institute of Industrial Research developed a novel cement, subsequently named "Hubbellite," by the incorporation of finely divided copper powder in magnesium oxychloride cement. This cupriferous cement has unique properties that have led to its wide use as a floor surfacing.

Studies by Farrell and Wolff indicated that the growth of molds was markedly inhibited after contact with Hubbellite and that an inhibitory action was likewise produced on the growth of bacteria. Concurrently

Mallmann demonstrated that Hubbellite produced a lethal effect upon bacteria, yeast and molds.

During the past few years it has frequently been reported that cockroaches cease to be a nuisance in stores, restaurants, etc., after the installation of Hubbellite flooring. The present study was undertaken to obtain quantitative data on the possible repellency of this material to cockroaches.

#### Materials and Methods

Preliminary tests were made to determine if repellency could be demonstrated. Glass aquaria having a twogallon capacity were used as testing chambers, each having one-half of the floor covered with Hubbellite, the other half with Portland cement. Aquaria serving as controls were entirely floored either with Portland cement or Hubbellite. Gray-colored Hubbellite was selected because it matched more closely the Portland cement. These materials were applied in the form of a layer one-half inch thick. The sides of each aquarium were covered with a light film of oil which served to keep the roaches on the floor. Each aquarium was provided with two

(Turn to Page 135)

Table I.—The Repellency Effect of Hubbellite on the German Cockroach, Blattella germanica

Test	Test Chamber				L	Distril		n at 2		ur					Total Number of	Per cent Dis- tribu
Chamber		2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
	Hubbellite - Food - Water(Cement - Food - Water10		0 10	0 10	0 10	1 9	1 9	2 8	1 9	0	0 10	3	0 10	0 10	132	6 94
2	Hubbellite - Food - Water(Cement - Food - Water10		2 8	0 10	0 10	0 10	0 10	0 10	1 9	1 9	0 10	1 9	1 9	0 10	6 134	4 96
3	Hubbellite - Food - Water		1 9	2	0 10	1 9	0 10	1 9	0 10	0 10	0 10	3 7	0 10	0 10	11 129	8 92
4	Hubbellite - Food - Water (Cement - Food - Water10		0 10	1 9	1 9	1 9	0 10	1 9	0 10	0 10	0 10	0 10	1 9	0 10	5 135	4 96
5	Cement - Food - Water10		9	0 10	3 7	10 0	7 6	4 3	5 6	6 5	3 4	7	5 9	4 5	63 77	45 55
6	Hubbellite - Food - Water0 Hubbellite - Food - Water10		7 3	0 10	1 9	5	9	4	3 7	2 8	4 6	3 7	3	5	48 92	34 66

Table II.—The Repellency Effect of Hubbellite on the American Cockroach, Periplaneta americano

Test	Test Chamber					D	istril		n at 2 rvals		ur					Total Number of	Per cent Dis- tribu-
Chamber		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
1	Hubbellite - Food - Water Cement - Food - Water		6	2 8	8 2	0 10	2	0 10	0 10	1 9	0 10	2 8	0 10	1 9	2 8	23 117	16 84
2	Hubbellite - Food - Water Cement - Food - Water		5 5	0 10	7 3	2	0 10	2 8	0 10	2 8	2 8	4 6	0 10	2	3 7	33 107	24 76
3	Hubbellite - Food - Water Cement - Food - Water1		6	2 8	5 5	0 10	0 10	0 10	2 8	1 9	0 10	1 9	0 10	0 10	0 10	15 125	11 89
4	Hubbellite _ Food - Water Cement - Food - Water		2 8	4	6	3	0 10	3 7	2	3 7	0 10	2	0 10	2 8	0 10	30 110	2 98
5	Hubbellite - Food - Water Hubbellite - Food - Water		8 2	3 7	8 2	5 5	7 3	1 9	5 5	10 0	7 3	8 2	8 2	10 0	7 3	94 46	67 33
6	Cement - Food - Water Cement - Food - Water		9	9	5 5	7 3	6	7 3	9	1 9	3 7	3	2	1 9	6	70 70	50 50



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Table III.—The Repellency Effect of Hubbellite on the Oriental Roach, Blatta orientalis

Test	Test Chamber					L	Distri		n at 2	4 ho	ur					Total Number of	Per cer Dis- tribu.
Chamber		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
1	Hubbellite - Food - Water Cement - Food - Water		4	2	1 9	2 8	1 9	1 9	0 10	1 9	2 8	0 10	5 5	0 10	1 9	22 118	16 84
2	Hubbellite - Food - Water Cement - Food - Water		2 8	0 10	0 10	2 8	0 10	0 10	2 8	1 9	1 9	1 9	0 10	0 10	1 9	15 125	11 89
	Hubbellite - Food - Water Cement - Food - Water		0 10	3 7	0 10	0 10	1 9	0 10	3 7	132	6 94						
	Hubbellite - Food - Water Cement - Food - Water		3 7		0 10	0 10	0 10	0 10	0 10	9	1 10	0 10	0 10	0	2	12 128	9 91
	Hubbellite - Food - Water Hubbellite - Food - Water		9	9	5 5	8 2	7 3	46	10 0	6	2 8	9	7 3	3 7	10 0	95 45	68 32
	Cement - Food - Water Cement - Food - Water		6 4	8 2	6	8 2	9	4	6	9	3 7	8 2	3 7	3 7	10 0	84 56	60 40

Table IV.—The Repellency Effect of Hubbellite on the German Cockroach, *Blattella germanica* in the absence of food or water or both on the Portland Cement half of the test chamber.

Test	Test Chamber					I	Distri	butio Inte	n at :		ur.					Total Number of	Per cen Dis- tribu-
Chambe		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
1	Hubbellite - Food - Water	0	2 8	0 10	0 10	1 9	2 8	2	3 7	0 10	3 7	19	2	3 7	0 10	19 121	14 86
2	Hubbellite - Food - Water Cement Water		1 9	0 10	2 8	10 2	9	10 10	2 8	3 7	0 10	0 10	1 9	2	0 10	41 99	29 71
3	Hubbellite - Food - Water		4	1 9	0 10	0 10	0 10	0 10	8 2	3 7	6	10 0	8 2	7 3	10 0	57 83	41 59
	Hubbellite - Food - Water Hubbellite - Food - Water				10 0	0 10	5 5	10 0	0 10	3 7	1 9	1 9	8 2	3 7	4 6	51 89	36 64
	Hubbellite Hubbellite		6	0 10	9	1 9	10 0	10 0	2 8	0 10	2 8	6	9	2 8	3 7	60 80	43 57
	Cement - Food - Water				0 10	3 7	6	0 10	9	0 10	7 3	7 3	4	6	6	57 83	41 59
	Cement		3 7	9	3 7	3	6	8	1 9	6	7 3	7	2	7 3	9	76 64	54 46
	Hubbellite - Food - Water		0	0 10	0 10	0 10	0 10	1 9	2 8	1 9	0 10	0 10	1 9	1 9	0 10	7 133	5 95

Table V.—The Repellency Effect of Hubbellite on the American Cockroach, *Periplaneta americana* in the absence of food or water or both on the Portland Cement half of the test chamber.

Test	Test Chamber				I	Distril		n at :		ur					Total Number of	Per cent Dis- tribu.
Chambe		1 :	2 3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
1	Hubbellite - Food - Water	6	7 1	3 7	2 8	1	3	4	1	1	0	0			29	24
	Cement - Food - Water	4	3 9	7	8	9	7	6	9	9	10	10			91	76
2	Hubbellite _ Food - Water	0	8 2	0	1	0	8	4	1	4	4	2			34	28
	Cement - Food	10	8 2 8	10	9	10	2	6	9	6	6	8			86	72
3	Hubbellite - Food - Water Cement Water	3	B 0	3	0	0	5	4	0	5	0	0			28	23
	Cement Water	7	2 10	7	10	10	5	6	10	5	10	10			92	77
4	Hubbellite - Food - Water	2	6 0		2	0	3	7	1	3	1	2			28	23
	Cement	8	1 10	9	8	10	7	3	9	7	9	8			92	77
5	Hubbellite - Food - Water	6	2 0	2	0	3	7	8	7	9	2	3			49	41
	Hubbellite - Food - Water		B 10	2 8	10	7	7 3	8	3	1	8	7			71	59
6	Hubbellite	3	3	0	8	2	9	6	5	4	6	5			52	43
	Hubbellite	7 !	7	10	2	8	1	4	5	6	4	5			68	57
7	Cement - Food - Water	9	3	3	2	1	4	6	5	6	7	7			54	45
	Cement _ Food - Water	1 9	7	7	8	9	6	6	5	4	3	3			66	55
8	***************************************															

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Therefore, while producing D.D.T. for war uses, Penn Salt's Research and Development Department at Whitemarsh Research Laboratories is making extensive explorations for the future possibilities of D.D.T.

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Table VI.—The Repellency Effect of Hubbellite on the Oriental Roaches, Blatta orientalis in the absence of food or water or both on the Portland Cement half of the test chamber.

Test	Test Chamber				D	Distri		n at 2 rvals	4 ho	ur					Total Number of	Per cen Dis- tribu_
Chamber		1 2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
	Hubbellite - Food - Water		3 3	4 6	4	1	1	0	3	2	4 6	2	4	3	41	29
	Cement - Food - Water	3	7 7	6	6	9	9	10	7	8	6	8	6	7	99	71
2	Hubbellite - Food - Water	3		0	1	2 8	0	1	3 7	0	4	6	3	4	28	20
	Cement - Food	7 10	0 9	10	9	8	10	9	7	10	6	4	7	6	112	80
3	Hubbellite - Food - Water	0 (	) 4	6	1	2 8	3	0	5	0	7	2	7	7	44	31
	Cement Water1	0 10	) 4	4	9	8	7	10	5	10	7 3	8	3	3	96	69
4	Hubbellite - Food - Water	7 (	) 3	4	2 8	1	2	0	1	2	4	3	1	0	30	21
	Cement	3 10	7	6	8	9	8	10	9	8	6	7	9	10	110	79
5	Hubbellite - Food - Water	9 1	7 5	0	8	8 2	1	2	7	1	7	5	7	6	73	52
	Hubbellite - Food - Water	1 3	3 5	10	2	2	9	8	3	9	3	5	3	4	67	48
6	Hubbellite	3 8	5 5	4	1	9	4	4	2	5	4	2	5	3	59	42
	Hubbellite	7 2	5	6	9	1	6	6	8	5	6	8	5	7	81	58
7	Cement - Food - Water	8 8	8	4	8	8	7	1	6	2	6	8	7	3	84	60
	Cement - Food - Water	2 2	2	6	8	8	3	9	4	8	4	2	3	7	56	40
8	Cement		7	7	6	9	1	7	1	1	2 8	1	0	0	54	39
	Cement	4 4	3	7 3	4	1	9	3	9	9	8	9	10	10	86	61

Table VII—The Repellency Effect of Colored Hubbellites on the German Cockroach, Blattela germanica

Test	Test Chamber					L	distril		n at l	14 hor	ur					Total Number of	Per cen Dis- tribu_
Chamber		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
1	Habbellite (Green) - Food -																
	Water		3	0	0	10	0	10	9	9	10	3	0	0	0	15	11
	Cement - Food - Water	3	7	10	10	10	10	10	9	9	10	7	10	10	10	125	89
2	Hubbellite (Brown) . Food -																
	Water	2	1	. 1	0	0	2	0	0	0	0	0	0	1	0	7	5
	Cement - Food - Water	8	9	9	10	10	8	10	10	0 10	10	10	10	9	10	133	95
3	Hubbellite - (Red) - Food -															-	
	Water	4	6	1	1	0	0	0	0	0	0	1	1	0	0	14	10
	Cement - Food - Water		6	9	9	10	10	10	10	10	10	9	9	10	10	126	90
4	Cement - Food - Water	7	9	2	6	8	3	9	7	4	4	5	6	1	6	77	55
	Cement - Food _ Water		1	8	6	8 2	3	1	7	6	6	5	4	9	4	63	45
5	Hubbellite - Food - Water	3	5	1	4	6	4	5	7	3	5	3	5	5	5	61	44
	Hubbellite - Food - Water		5	9	6	4	6	5	7	7	5	7	5	5	5	79	56

Table VIII.—The Repellency Effect of Colored Hubbellites on the American Cockroach, Periplaneta americana

Test	Test Chamber				L	Distri		n at :		ur					Total Number of	Per cent Dis- tribu-
Chambe		1 2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	tion
1	Hubbellite (Green) - Food - Water Cement - Food - Water	1 3 7	1 9	4 6	0 10	0 10	0 10	1 9	0 10	0 10	2 8	2 8	5	5	24 116	17 83
2	Hubbellite (Brown) _ Food - Water		0	3 7	0 10	1 9	2 8	2 8	0 10	1 9	0 10	0 10	2 8	0 10	15 125	11 89
3	Hubbellite - (Red) - Food - Water			0 10	3 7	0 10	0 10	1 9	0 10	0 10	0 10	0 10	1 9	0 10	7 133	5 95
4	Cement - Food - Water Cement - Food - Water			7 3	3 7	9	8 2	5 5	10 0	9	8 2	9	6	10 0	103 37	74 26
5	Hubbellite - Food - Water Hubbellite - Food - Water1		3 7	0 10	0 10	2	0 10	0 10	9	7 3	3 7	2 8	7 3	5 5	39 101	28 72





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Test chambers containing American Roaches showing their typical distribution on Portland cement and Hubbellite. The lower half of each container is sloored with Hubbellite.

vials of water and two cubes of dog food, one of each being placed in either end. Each aquarium prepared in this manner was then supplied with ten roaches and placed in absolute darkness. Observations and counts of distribution were made at regular intervals (24 hours), after which each aquarium was turned end for end, and the roaches disturbed to counteract their gregarious tendencies. Each series of tests was conducted for a period of two weeks and repeated. Tests were conducted using the German Roach (Blattella germanica), the American Roach (Periplaneta americana), and the Oriental Roach (Blatta orientalis).

In conjunction with these tests, the relative effect of wet and dry surfaces was studied. Both Hubbellite and Portland cement were dampened in a manner to simulate mopping. To determine the relative efficacy of wet and dry surfaces, tests were made using tap-water, well-water, and rainwater.

In the second series of tests the degree of repellency was determined by varying the supply of food and water. In these the Hubbellite half of each aquarium was provided with both food and water, while each half of those furnished with a flooring of Portland cement received various combinations of these substances, e. g., food without water, water without food, and neither food nor water. The aquaria serving as controls, which were floored entirely

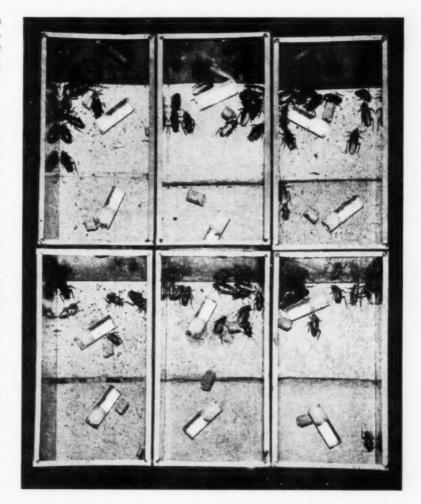
In a final series of tests to determine the relative repellency of colored Hubbellites, aquaria were prepared and tests run in the manner described above, except that the aquaria were floored with green, brown, or red materials.

with Hubbellite or Portland cement,

either were supplied with both food

and water or were left without either.

To ascertain if Hubbellite possessed toxic properties, a series of battery jars was floored with this cement, with the food and water combinations



varied in each. One jar received both food and water; a second, food without water; a third, water without food; and a fourth neither food nor water. Control jars consisted of those furnished with Portland cement and untreated jars not provided with a flooring. One of each type of control jar received both food and water; another, neither food nor water.

#### Results

An examination of the data from the first series of tests in which Hubbellite and Portland cement were compared clearly indicates the repellency of Hubbellite to all three species of roaches, with a more marked efficiency exhibited against the German Roach (Tables I, II, and III). Insignificant differences in repellency were found in the results of tests to determine the relative efficiency of wet and dry surfaces.

In the second series of tests

where the food and water were varied, positive repellency was revealed against each of the three species. Again, the percentage of roaches found on the Hubbellite was lower for the German Roach than for the American and Oriental species (Tables IV, V, and VI). In other words, the presence of food or water or both on only the Hubbellite side fails to cause an increase in the number of German Roaches on this half of the test chamber. Likewise, an insignificant increase in number occurs in the case of the American Roach; however, a slightly marked increase is noted for the Oriental Roach.

In the final series of tests the findings clearly indicate gray, brown, red, and green Hubbellite to be equal in effectiveness against the German and American Roaches; however, the figures obtained for Oriental Roaches showed the gray Hubbellite to be more

(Turn to Page 157)

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#### TRADE MARKED

# INSECTICIDES CONTAINING DOT

By

Dr. R. C. Roark

Bureau of Entomology & Plant Quarantine, U. S. D. A.

DT is the chief active ingredient in several trade-named insecticidal compositions that have been tested and reported on in Switzerland, Great Britain, and the United States. The content of DDT in these products has varied widely. As soon as DDT is freely available for nonmilitary uses, many manufacturers plan to include it in their proprietary insecticides. It therefore seems desirable to record information on the composition of trade-marked products that contain DDT; otherwise the literature on insecticides will become hopelessly confused. Already reports have been published that use Gesarol and DDT synonymously, whereas the former contains only 3 or 5 per cent of the

The following symbols and names have been used to designate DDT or compositions containing it: GNB, GNB-A, GNB-A-DDT, Anofex, DeDeTane, DeDiTox, Gesarol, Guesarol, Gesapon, Guesapon, Gesarex, Guesarex, Gyron, Ixodex, Neocid, and Neocidol.

The contraction DDT for dichloro - diphenyl - trichloroethane was suggested by an official of the British Ministry of Supply early in 1943 (West and Campbell 12). Before this suggestion was made, the active ingredient of Gesarol compositions from Switzerland was designated GNB, meaning Gesarol-Neocid base, and the product made in the United States was called GNB-A (Froelicher 7). The latter designation is trade-marked in the United States, trade-mark No. 404,804 granted the Geigy Company on December 21, 1943. The symbol GNB-A-DDT is also the property of the Geigy Company, trade-mark No.

406,070 granted them on March 7,

Anofex is a trade name of a DDT insecticide which will be sold in Brazil by the Companhia de Anilinas e Produtos Quimicos Geigy do Brasil, S. A. No DDT is now being manufactured in Brazil, but it is imported from Switzerland and packaged locally (Leslie 9, Anon. 1).

DeDeTane is advertised in England by the Murphy Chemical Company, Ltd., Wheathamstead, Herts, as a DDT-containing insecticide which growers will be able to buy as soon as DDT is available. Tests with this product are reported by Chambers, Hey and Smitt (5).

. DeDiTox is another proprietary DDT spray material presumably made by the Murphy Chemical Company in England. Tests with it for the control of the apple blossom weevil (Anthonomus pomorum L.) are described by Chambers and Hey (4).

DDT mixed with an inert base was first submitted for insecticidal testing to R. Wiesmann in Switzerland in 1939 under the name "Experiment No. G 1750." Later it was called Gesarol. (West and Campbell 12.)

As early as March 14, 1942, the J. R. Geigy, A. G., of Basle, Switzerland, advertised Gesarol Spritzmittel as a substitute for arsenical insecticides. According to information released on May 31, 1944, by the American representatives of this concern, the Geigy Company, Inc., of New York City, Gesarol is a generic term denoting "a series of insecticidal compositions for use against agricultural pests."

Gesarol Spritzmittel (Gesarol Spray Insecticide) was first imported into the United States on September 4, 1942. A sample of this 100-pound shipment was examined chemically at the Beltsville Research Center by chemists of the Bureau of Entomology and Plant Quarantine and found to contain 5 per cent of a technical grade of 1-trichloro-2,2-bis(p-chlorophenyl) ethane, the product later designated as DDT. On the same date the first Gesarolstaub (Gesarol Dust Insecticide) was brought in; this contained 3 per cent of DDT.

The Geigy Company of New York was granted trade-mark No. 406,217 by the United States Patent Office on March 14, 1944, which covers Gesarol for "chemical germicides, chemical insecticides, chemical fungicides, chemical vegecides, chemical sterilizers and chemical disinfectants." Continuous use of this trade-mark since September 27, 1943, is claimed. The trade name "Gesarol" is also registered in Switzerland, but in England the name had to be changed to "Guesarol" because of the similarity of the Swiss name to names already registered in England. According to West and Campbell (12), both Guesarol dusting powder and Guesarol spray contain 5 per cent of DDT.

Gesarol-A and Gesarol-P are trade-marks covering DDT insecticides of the Companhia de Anilinas e Produtos Quimicos Geigy do Brasil, S. A., for agricultural spraying and dusting. The amount of DDT in these preparations is understood to be about 3 per cent. (Leslie 9.) An authorized agent for the sale of this company's products in Brazil is DDT Insecticidas, Ltda., of Rio de Janeiro. This firm claims to be the largest distributor in Brazil for the Geigy product Neocid. (Anon 2.)

(Turn to Page 155)

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## Report DDT Test Results

A SUMMARY of some of the test work that has been done on DDT insecticides over the past two years, together with findings and recommendations on their use and application, has just been issued by the Agricultural Research Administration, United States Department of Agriculture. The complete text of the bulletin follows:

#### Some Facts About DDT Insecticide to Date—Some of the Results of Two Years' Testing

(Note: Following is an evaluation of experiments conducted with DDT insecticides during 1943 and 1944 against more than 170 different insects. It should be understood clearly by those who use this information that no recommendations are being made for the practical use by civilians of DDT in any form on any crops or against any of the insects mentioned below. Many questions relative to best mixtures or solutions to use, the dosages to apply, application schedules, residue hazards, effects on beneficial insects, and results when used under conditions different from those prevailing in these experiments remain unanswered to date. Further investigations are necessary in order to obtain the answers to these questions. In view of the wide-spread public interest, and the need of a guide for answers to public inquiries concerning DDT, it seems desirable to make this brief summary of some results to date, subject to correction by further experiment. Much more experimental work is required to produce usable and practical DDT insecticides, i.e., to determine the right mixture or solution to use for each pest, the amounts required, and the time of application for each insect, as well as the necessary safeguards which must be used when DDT is applied.)

#### DDT Effective Against Certain Pests, Not All

DDT insecticides were found experimentally to be definitely more effective than those currently used for control of some 30 pests that attack field crops, man, livestock, and trees, U. S. Department of Agriculture entomologists report in a summary of the results of two years' tests with this chemical against more than 170 different species of insects, in cooperation with various State agricultural experiment stations. Against 19 other insects, DDT insecticides in these tests were about equal to those ordinarily used. Against 14 important destructive pests, including the boll weevil, they were found to have little or no

effect. These early tests showed that the performance of DDT insecticides is outstanding against certain pests, but that DDT is not a cure-all or panacea for all insect problems.

The 30 pests against which experiments show DDT to be especially toxic include the codling moth, cabbage looper, catalpa sphinx, cotton boll-worm, cotton flea-hopper, eastern tent caterpillar, elm bark beetle, greenstriped maple worm, gypsy moth, horn flies on cattle, Japanese beetle, Lygus and four other kinds of sucking bugs, mimosa webworm, pine sawflies, pink bollworm, spruce budworm, velvetbean caterpillar, vetch bruchid, white-fringed beetles, mosquitoes, bedbugs, three kinds of lice on man, and houseflies and fleas in buildings.

This list is based on the most conclusive of the experiments to date, but it is subject to correction or additions if future experiments against these or other insects or under different conditions change the picture. Farmers are warned that DDT is not recommended for general use at this time, even against those insects upon which some experiments have shown it to be particularly effective.

Availability of DDT depends on military needs for critical materials required in its manufacture, as well as for insecticides containing it. The material is, therefore, under allocation by the War Production Board to DDT manufacturers. Currently, only very small amounts have been in turn allotted by these companies to civilian agencies or individuals for experimental purposes.

The war situation makes inadvisable any prediction regarding unlimited availability of DDT for civilian use. Even if supplies were available, say entomologists, DDT insecticides could not be generally recommended at this time. Too little is yet known about the harm that DDT may do to beneficial insects, plants, soil, livestock, wildlife, or to consumers of fruit and vegetables containing DDT residues.

The experiments have also shown that DDT insecticides are about equal to other materials in effectiveness against these 18 pests: corn ear worm, diamondback moth, European corn borer, cockroaches, grape berry moth, grassphoppers, imported cabbage worm, oriental fruit moth, potato leaf-hopper, silverfish, and the following stored product pests—cadelle, confused flour beetle, granary weevil, Indian-meal moth, lesser grain borer, red flour beetle, rice weevil, and sawtoothed grain beetle. In tests carried on thus far DDT insecticides have shown relatively little or no effect against these 14 common pests: boll

weevil, California red scale (adults), cattle grubs, cotton aphid, cotton leaf-worm, Florida red scale, Mexican bean beetle, orchard mites (2 kinds), parlatoria scale, plum curculio, red spider, sugarcane aphid, and sugarcane borer.

#### DDT Cannot Be Recommended Yet for Farm or Home Use

Two main problems that must be solved before DDT insecticides can be recommended for wide use against any pest are: (1) how to make standard mixtures for DDT sprays and dusts which will be practical and economical to use and give reliable results; and (2) how DDT insecticides can be safely and intelligently used on the farm and in the home.

Effectiveness against certain pests in field experiments is not enough to warrant recommendations for general use of DDT insecticides on the farm or in the home even against the susceptible insects. Practical mixtures and dosages, and the most suitable methods for their application are not yet known. The proper timing of applications against different pests under various conditions is yet to be determined. Various combination treatments of DDT with other materials must be tested in order to provide a practical, economical and efficient spray or dust.

DDT insecticides have been found to kill honeybees and other pollinating insects on which many fruit and seed crops depend for fertilization. Parasites and predators which help to hold in check many harmful pests are also destroyed. A serious problem is how to use DDT to kill injurious pests without too great decimation of insects beneficial to man.

#### DDT Insecticides May Harm Crops and Soils

Possible injury to food plants, cover crops, and soils should be investigated before recommendations for the general agricultural use of DDT are made. DDT used experimentally has not been appreciably harmful to most treated plants. But injury to several kinds of food plants, particularly to some vegetables and to rye has been reported under certain conditions. Experimental treatment with DDT to kill insects in the soil, has retarded growth of some plants. Widespread use of DDT insecticides may have a cumulative effect on soil, with resulting injury to crops or fruit trees grown in it. This effect can be determined only after experiments over a long period of time.

#### DDT Residues on Sprayed Food Products Need More Investigation

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used in agriculture. But it is poisonous to animals when large amounts are eaten. On man, some of it can be absorbed through the skin in oil solutions, particularly during repeated or prolonged exposures. DDT deposits last longer than others under some conditions on fruits and vegetables sprayed with it. No effective method for removing the residues of DDT to protect consumers has been worked out. Since it is possible that DDT may be cumulative in man, as lead arsenate is, general use may represent a hazard for consumers. This must be determined and methods of prevention developed before DDT insecticides can be recommended for general use by farmers.

# Experimental Results of Two Years' Work, Though Not Final, Highly Important

The facts presented here are not the final word on DDT. They are merely a guide or inventory of current information on the preliminary results of two years of experiments and field tests conducted by a large number of laboratories of the Bureau of Entomology and Plant Quarantine, in close cooperation with several State agricultural experiment stations and other agencies. Despite this short period, however, many of these results are likely to be confirmed by future experiments. In these two years, DDT has been tested more extensively against more insects in more localities than any other insecticidal compound in such a short period.

Consequently, even when compared with early work on such discoveries as rotenone and pyrethrum, more information is already available about DDT in relation to more agricultural insects than would normally be true after several years of testing a new insecticide.

Why did this happen during a world war? There are at least four main reasons for the country-wide scientific and popular interest in DDT insecticides during the war years: (1) the early successful discoveries in 1942-43, by entomologists at the Orlando, Fla., laboratory of the Bureau of Entomology and Plant Quarantine, by which DDT insecticides were developed which are far superior to any others in protecting the armed forces against disease-carrying insects-body lice, mosquitoes, and flies; (2) the wartime shortages of pyrethrum and rotenone which stimulated an intensive search to find satisfactory substitutes as quickly as possible; (3) the unusual persistence of DDT residues which make them effective far longer than any other contact insecticide known; and (4) the extremely favorable results of the initial laboratory and field tests in 1943 when DDT was first tried out against agricultural pests in this country.

#### Public Interest Requires Authoritative Statement on Findings to Date

As a result of this activity and success with an insecticide which was unknown to the public in 1942, over 500 articles had been published about it by 1944. DDT has become a household word to millions of Americans who have never used it or even seen it. To other millions fighting abroad, and to inhabitants in many foreign lands, it is a familiar and necessary military protection against disease and death. While people in the United States merely hear about DDT, it has been used on civilians in many foreign lands, in order to protect U. S. military forces from insect-borne diseases. Arabs know the comfort it can bring to their lice-freed bodies. Many civilians in Naples owe their lives to the protection DDT louse powder gave against a typhus epidemic, which also threatened U. S. troops. It is natural for farmers and housewives to want to use DDT now. Some of the published articles have made large claims for DDT, some of which are far beyond established facts. Such wide publicity has aroused great public inter-Many farmers have been led to believe that DDT is a panacea for most of their insect problems. Many more think DDT insecticides are now ready for use on their farms, if only DDT could be obtained. Some are even expecting to use it this season. This has led naturally to many inquiries as to what is known about DDT and when the farmer and housewife can expect to have DDT insecticides for safe use on the farm and in the home. This summary of research findings to date will help answer such inquiries and correct misconceptions from unauthorized statements.

#### Summary

Department of Agriculture entomologists point out that experiments for two years have demonstrated that DDT is a promising chemical against a number of agricultural pests—that a DDT insecticides can kill many insects. Its limitations and qualifications have not yet been worked out. Continued experiments, which are being carried on as rapidly as facilities permit, will help produce practical DDT sprays and dusts, and determine more exactly how to use them safely and efficiently.

#### N. J. Mosquito Assn. Meets

A streamlined version of its customary annual meeting—the 32nd—was held by the New Jersey Mosquito Extermination Association at the Hotel Claridge, Atlantic City, N. J., March 28, 29 and 30. To keep within the limit of 50 persons from outside the local area, in conformity with the request of the War Committee on Con-

ventions—many papers were mailed in by their authors to be read at the meeting. Later they will be published and distributed to those unable to attend. Army, as well as local and national mosquito control, and DDT for use as a mosquito larvacide were discussed at the meeting.

#### Irving Sameth Dies at 50

H. G. Irving Sameth, executive vice-president of Sameth Exterminating Co., New York, and a director and past president of the National Pest Control Association, died March 19. A veteran of the first World War, in which he served overseas with the Medical Corps, Mr. Sameth followed in his father's footsteps in the exterminating business. His father, N. N. Sameth, had founded the company about 40 years ago. Surviving Mr. Sameth are his wife, Lillian and his two daughters, Jane and Ann.

#### Rohm & Haas Names Miller

The appointment of Arthur M. Miller, as assistant to the president of Rohm & Haas Co., Philadelphia, was made known late last month. A graduate of Massachusetts Institute of Technology and Harvard University, Mr. Miller was originally in charge of engineering at the Tennessee Eastman Corp. Kingsport plant. More recently he was assistant director of operations for General Chemical Co., New York. Following this he went with the Tennessee Valley Authority, in 1933, and became works manager of the chemical plants at Muscle Shoals. Later he served as a director of the TVA Department of Chemical Engineering.

#### John Menkhaus Dies at 67

John H. Menkhaus, 67, of Janitors Supply Co., Cincinnati, died recently in Good Samaritan Hospital there. Mr. Menkhaus, who was a charter member of the Sanitary Supply Association, having started in business in 1914, had been ill for the past few months, and was taken to the hospital with a heart condition about a month before he died. The business is being carried on under trustees by Howard Wiggers, who had joined the firm about three years ago.

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# TRADE VEWS ...

#### United Sanitary Chemicals Expands

United Sanitary Chemicals Co., janitor supply and sanitary chemicals house, Baltimore, announced last month the addition of 10,000 square feet of floor space to its present quarters by the purchase of an adjoining five-story building, at 29 S. Howard St. The company now occupies 27 S. Howard St.

#### Deny Potash Allocation Needed

The War Production Board has just been advised by the newly formed Caustic Potash Manufacturers' Industry Advisory Committee that in the opinion of the members allocation of caustic potash is not needed at this time. As an alternative to allocation the committee recommends maintenance of close cooperation between producers and the WPB. The anticipated monthly deficit will not exceed 500 to 600 tons in the opinion of committee members, and they are optimistic that new production will eliminate even this deficit in the course of the next two or three months.

Members of the committee include the following: A. B. Chadwick, Solvay Sales Corp., New York; E. C. Speiden, Isco Chemical Division, Innis, Speiden & Co., Niagara Falls, N. Y.; S. W. Jacobs, Niagara Alkali Co., New York; Louis Neuberg, Westavaco Chlorine Products Co., New York; and C. D. O'Dell, Dow Chemical Co., Great Western Division, San Francisco.

#### Dr. Reed Begins New Duties

Dr. W. G. Reed, who in February was named to succeed Dr. C. C. McDonnell as Chief of the Insecticide Division, Livestock and Meats Branch, of the U. S. Department of Agriculture, transferred to Washington, D. C., March 1, to take up his new duties. Dr. Reed was assistant inspector in charge of meat inspection, Chicago, before his recent advancement. He has been with the Department of Agriculture since Nov. 18, 1929, having been graduated from Chicago Veterinary College with a degree of Doctor of

Veterinary Medicine in 1918. He carried on a general veterinary practice until he joined the Department. In



DR. W. G. REED

1931 he entered meat inspection service and has advanced steadily in important technical and administrative positions since.

#### Monsanto DDT to be "Santobane"

"Santobane" is the name under which Monsanto Chemical Co., St. Louis, will market DDT, it was announced March 20. If formulations of "Santobane" are produced, the company said, the same term will be used and with it an identifying letter or number. At the present time, Monsanto makes only the basic chemical. Volume production of the insecticide was begun by the company last September, with virtually the entire output going to meet military requirements.

#### Fire Extinguisher Officers Re-elect

The following officers were reelected by the Chemical Fire Extinguisher Association, New York, at its annual meeting in Chicago, March 8: president, Arthur G. Sullivan, vicepresident, Buffalo Fire Appliance Corp., Buffalo; vice-president, J. O. Binford, general sales manager, American-La France-Foamite Corp., Elmira, N. Y., treasurer, Herman W. Diener, secretary, George W. Diener Mfg. Co., Chicago and commissioner, W. J. Parker, of W. J. Parker, Inc., New York. Directors re-elected at the meeting were: George H. Boucher, general sales manager, Pyrene Mfg. Co., Newark, N. J., and E. A. Warren, vice-president, General Detroit Corp., Detroit.

#### George Carr Dearborn Chairman

George R. Carr has been elected chairman of the board of Dearborn Chemical Co., Chicago, to succeed the late Robert F. Carr.

#### McCormick Wins Fourth "E"

McCormick and Co., Baltimore, received its fourth Army-Navy "E" Award in formal presentation ceremonies at the plant, March 14. Major General Philip Hayes, Commanding General of the Third Service Command, made the presentation of the award to Charles P. McCormick, president, who represented the company, which is one of the leading producers of DDT insecticide powders and sprays for the armed forces throughout the world. In receiving this fourth "E," the firm adds a third white star to its "E" pennant. The latest award is based on the company's continued excellence in war production, which has increased more than 100 per cent during the past year. The company has produced more than 30 million of the small individual cans of antityphus powder, which are issued to troops in invasion kits.

#### S. P. Nickells, 79, Penick, Dies

Samuel P. Nickells, 79, who retired from the insecticide department of S. B. Penick & Co., New York, in 1939 after more than 60 years in the drug industry, died March 17, at his home in Ridgewood, N. J. He joined the Penick organization in 1915 as vice-president remaining in that post until 1920, when he resigned to go in business for himself. In 1926, after selling the partnership he had formed with W. R. Howland to Murray & Nickells, Chicago, he rejoined S. B. Penick & Co. A native of Ohio, Mr. Nickells had previously been connected with Eli Lilly & Co., Minneapolis, Parke, Davis & Co., Detroit, and William R. Warner & Co., Philadelphia.

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Principles of Disinfection
Coal Tar Disinfectants
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The Insect Problem
Pyrethrum Insecticides
Rotenone Materials
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# Co-ops As Insecticide Outlets

AGRICULTURAL cooperative associations owned and controlled by farmers are providing insecticide manufacturers with outlets for a huge volume of their products, examination of government figures on various phases of co-op activities reveals. Latest data available covering business done by 17 of the largest cooperative purchasing associations show that in 1942, 13 of the 17 handled insecticides valued at \$3,289,655. This was an increase of 21 per cent over the 1941 figure.

Fruit Growers Supply Co., Los Angeles, Calif., topped this 1942 list with a sales total of \$1,216,583 worth of insecticides, purchased for use by farmer members of the marketing cooperative which sells "Sunkist" citrus fruits for California growers.

GLF Exchange, in New York state, was second in importance as an outlet for insecticides, with a 1942 sales volume of \$1,053,559. Others on the list with their 1942 figures of sales to members are as follows:

Eastern States Farmers Exchange, W. Springfield, Mass., \$232,-773; Illinois Farm Supply Co., Chicago, \$125,860; Ohio Farm Bureau Cooperative Assn., Columbus, \$201,930; Indiana Farm Bureau Cooperative Assn., Indianapolis, \$78,632; Consumers Cooperative Assn., N. Kansas City, Mo., \$17,324; Farmers Union Central Exchange, St. Paul, \$25,048; Midland Cooperative Wholesale, Minneapolis, \$25,-415; Farm Bureau Services, Inc., Lansing, Mich., \$153,931; Pennsylvania Farm Bureau Cooperative Assn., Harrisburg, \$87,064; Central Cooperative Wholesale, Superior, Wis., \$12,681; Pacific Supply Co., Walla Walla, Wash., \$58,855.

Contrary to prevailing opinion, only a small proportion of the insecticides handled by the cooperatives are manufactured in their own facilities. On the list above only four organizations are said to follow this procedure. Total business done by this quartet in 1942 amounted to \$432,040. Supplies

of raw materials used in these co-op plants are purchased through regular commercial channels. Some co-ops handle commercial products under their private brand label.

A disinfectant business is conducted as a sideline by Falls City Cooperative Milk Producers Association at Louisville, Ky. This little cooperative, concerned chiefly with the marketing of milk for farmers serving the Louisville milk shed, started manufacture of a chlorine disinfectant in 1931. It is distributed through milk plants feed stores in the area. Figures on total volume of business are not available.

#### **Froelicher Addresses Exterminators**

Dr. Victor M. Froelicher of Geigy and Co., New York, addressed the Professional Exterminators Association on "DDT; It's Uses and Abuses," at the March 19th meeting at the Hotel Commodore, New York. Dr. John B. Schmitt and Professor Robert Filmer of Rutgers University, New Brunswick, N. J., Mr. William

O. Buettner, representing the National Association and George B. Lay of the U. S. Fish & Wildlife service, also spoke briefly. A representative of The Associated Hospitals of New York City spoke on the advantage of group insurance. Attendance including members and guests totalled 94. Tentative plans were made for future meetings, including talks on roach powders by Philip Mayer, Jr., and the dog tick by Charles Pomerantz. These two men spoke on these subjects at the Massachusetts State Conference in February and have offered to repeat their talks.

#### Charles S. Wehrly Dies

Charles S. Wehrly, for 12 years connected with Merchants Chemical Co., New York, died at his home in St. Albans, N. Y., March 17. He was a graduate of Rutgers University, New Brunswick, N. J. He is survived by his wife and a daughter.

#### S. N. Cummings a Colonel

Lieut. Col. S. N. Cummings, on leave of absence from Pylam Products Co., New York, for service with the Chemical Warfare Service, United States Army, has recently been advanced to the rank of Colonel.

#### Sanitary Supply Assn. Bulletins

Leo J. Kelly, executive secretary of the National Sanitary Supply Association has begun development of a series of bulletins on "Sanitary Supply Selling" for use by association members. The new bulletins are being produced, he explains, in the first issue, dated March 15, "with the thought that you can hand them to your men and through the ideas set forth, stimulate them to renewed effort and better selling." Supplementing this service he has started accumulation of a file of information dealing with new developments in the chemistry of sanitary supply products, which are available to members on request. In another service bulletin to be issued twice monthly, timely information is presented regarding developments affecting industry interests. Issue No. 1, for example, explained, among other things, the services available to small manu-



LEO J. KELLY

facturers through the federal Small War Plants Corporation; chemical patents obtainable from the Alien Custodian's office; the coal shortage; DDT paint; false claims regarding "plastic paint," and other matters.

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#### Sonneborn Names Two V.P.'s

Two new vice-presidents were named recently by L. Sonneborn Sons, Inc., New York. Dr. F. W. Breth, who has been with the company since 1915 as chief chemist and later as technical director, was named vice-president in charge of manufacturing. Gustave Schindler, president of Petroleum Specialties, Inc., New York, which he founded in 1939, has been named as the other new vice-president. He comes from a family of oil refiners and has operated a group of refineries which manufactured many specialized petroleum products similar to those made by Sonneborn.

#### Continental Can Appointments

H. P. Thelan, formerly manager of the steel container division of Owens-Illinois Glass Co., Toledo, recently acquired by Continental Can Co., New York, has been appointed manager of steel container sales for Continental, it was announced recently. He will make his headquarters in New York. G. E. DuCharme, formerly sales manager of the New York district, has been appointed manager of chemical and paint containers sales. Mr. DuCharme will make his headquarters in New York.

#### American Products Advances Two

E. F. Dinan, formerly general sales and advertising manager of American Products Co., was elected to the position of vice-president in charge of sales at the company's annual meeting of the board, in Cincinnati, recently. Mr. Dinan will be succeeded in his former post as advertising manager by Charles A. Branham, sales promotion manager, who will work in both capacities. Mr. Dinan has been with the company since 1934; Mr. Branham since 1936.

#### Move Michigan Chem, N. Y. Office

Michigan Chemical Corp., St. Louis, Mich., moved its New York office to 70 East 45th St., Room 5622, New York 17, on April 1, according to an announcement from Philip J. Lo Bue, eastern manager. The new telephone number is Murray Hill 5-6886.

#### Rasmussen on NAIDM Board

Arthur Rasmussen, sales manager for the Furst-McNess Co., Freeport, Ill., was elected a member of the



Arthur Rasmussen

Board of Governors of the National Association of Insecticide & Disinfectant Manufacturers at a meeting in Cleveland on March 15 to serve until the next annual

meeting of the Association. Mr. Rasmussen was chosen to fill the vacancy caused by the resignation from the Board of James McConnon of McConnon & Co., Winona, Minn.

#### Prebluda in U.S.I. Sales Post

Dr. Harry J. Prebluda has been named manager of special products sales by U. S. Industrial Chemicals, Inc., New York. He will be assisted by Robert K. Rigger, formerly with U. S. I.'s technical development laboratory.

#### DCAT Issues Booklet

The Drug, Chemical and Allied Trades Section of the New York Board of Trade is currently distributing among its members a 16-page booklet in which the history, services, aims and membership of the Section are given. In addition to listing the names and addresses of all the members, the booklet, also lists the type of industry classification to which the member belongs.

#### CSA Golf Plans Uncertain

No definite plans for golf outings have been set by the entertainment committee, with the approval of the executive committee, of the Salesmen's Association of the American Chemical Industry, it was announced March 12. This is in keeping with the government's request regarding conventions, trade shows and other group meetings. Improvement in the war situation may later justify a change in this policy, the announcement states.

#### Chemurgists Elect Badertscher

Dr. Amos E. Badertscher, of McCormick & Co., Baltimore, was recently elected chairman of a newly formed group which met at the McCormick teahouse, March 21, to form a Maryland section of the National Farm Chemurgic Council. The purpose of the new group would be the stimulation of the growth of farm products for industry.

#### Container Institute Names Officers

Livingston S. Keplinger, vicepresident of Rheem Manufacturing Co., New York, was re-elected president of the Steel Shipping Container Institute at its annual meeting, Mar. 26, at the Waldorf-Astoria Hotel, New York. The following vice-presidents were elected: H. W. Lees, vice-president, J. & L. Steel Barrel Co., New York; John Hauerwaas, president, United States Steel Products Co., New York; E. G. Gardner, vice-president, National Enamelling and Stamping Co., Milwaukee and Mrs. C. M. Andrada, secretary. John Neudoerfer, vice-president, Wheeling Steel Corp., Wheeling, W. Va., and H. P. Thelen, manager, container sales, Continental Can Co., New York, were elected directors.

#### Marietta-Harmon Merge

The merger of Harmon Color Works, Haledon, N. J. and Marietta Dyestuffs Co., Marietta, O., affiliates of American Home Products Corp., New York, was announced recently. Producer of acid colors and intermediates for the dye industry prior to the entry of the United States into the present war, the Marietta company now is a producer of the insecticide DDT. It was acquired by American Home Products Corp. in 1944. Officers of the new company include George LaVallee, chairman of the board, and Victor J. Chartrand, president.

#### David E. Aarons Dies

David E. Aarons, salesman for Twin City Shellac Co., Brooklyn, died March 26. He had been with the company for about 14 years. He is survived by his wife, Anna; a son, Joseph E. and a daughter, Edith Richeimer.



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#### Rotenone in Devil's Shoestring

The Texas Agricultural Experiment Station, College Station, Texas, which has been investigating possibilities for development of new sources of insecticides, reports that by careful selection and breeding of plants the rotenone content of "Devil's shoestring" has been increased until it is now possible to grow a product from seed which yields 3 per cent rotenone. In some cases rotenone content of the plant runs from 5 to 9 per cent and yields of 750 to 1,000 pounds of dried roots per acre appear possible.

Texas station is also experimenting with the culture of a plant called "Green Lily," which was found by the Wisconsin agricultural experiment station to be a good source of a potent insecticide. A third plant under investigation is a bulb from which red squill can be obtained.

#### Discuss DDT in Paint

DDT in paint is discussed in an article in the Dec., 1944 issue of the British trade journal Paint Technology, which is based on excerpts of a paper read before the general meeting of the Oil and Colour Chemists' Association in Manchester, England, last fall. The complete paper as read appeared in the Dec., 1944, issue of the Association's Journal. The title of the paper in Paint Technology is: "DDT, The New Insecticide—A General Survey and Some Possible Paint Applications." The authors are Neil R. Fisk and Eveline Fisk.

#### Owens-Illinois Changes

E. F. Bertrand, now on leave to serve with the War Production Board, upon his return will be sales manager of the drug industry sales division of Owens-Illinois Glass Co., Toledo, it was announced early last month. This move is in line with a recent division of sales responsibilities of the company into food, drug and beverage industries and the appointment of managers for each of these broad fields. Mr. Betrand will direct sales activities in the chemical, cosmetic and household products fields. Creation of a sales policy committee with Smith L. Rairdon, ... vice-president and general sales manager, as chairman, was also announced. In addition, H. C. Knepper, now manager of the sales control division, will become assistant to the general sales manager; K. J. Solon, identified with the Owens-Illinois Can Co. until its sale recently, will become manager of sales control. Jack Thayer, also formerly with Owens-Illinois Can Co., will become assistant New York branch manager.



#### CD&CA Elects Dunning

Harry E. Dunning, of Albert Verley & Co., was elected president of the Chicago Drug & Chemical Association, at the annual business meeting held March 29th, in the Walton Room of the Drake Hotel. Other officers are: vice-president, Dale F. Ruedig, Eli Lilly & Co.; secretary, John L. Thomas, Joseph Turner & Co., and treasurer, Wilson I. Doan, Dow Chemical Co. In addition, the following directors were elected to serve for a period of two years: Edgar E. Brand, L. Sonneborn Sons, Inc.; Charles R. O'Malley, Ed Davis, Davis & Davis, Inc., and A. L. Starshak, Valentine Laboratories, Inc.

#### "Thanite" Receives "Degree"

Hercules Powder Co., Wilmington, is distributing a mock diploma on behalf of their insecticide toxicant, "Thanite." The "diploma" awards "Thanite" the "degree of T. of F. S. (toxicant of fly sprays) cum laude from the school of experience, in recognition of its superior knockdown, kill and repellency."

#### Cornelius Products Joins NAIDM

The National Association of Insecticide and Disinfectant Manufacturers, Inc., New York, has just announced the election to associate membership of Cornelius Products Co., wax importers, refiners and manufacturers of 432 Fourth Ave., New York 16.

#### Kinzie Joins Whitlock Chemical

Roy W. Kinzie has become associated with the C. G. Whitlock Chemical Co., Springfield, Ill., as production superintendent. Mr. Kinzie was for some years in charge of Canadian manufacturing operations for the J. R. Watkins Co., of Winona, Minn., at their Winnipeg plant. More recently, he has been engaged in synthetic rubber production at the Goodrich Rubber Co., Akron, O.

#### DDT INSECTICIDES (From Page 139)

Gesarol E. B. dust contains 3 to 5 per cent of DDT on a base of china clay with good dusting properties. Gesarol E. Spray is a white powder containing 5 per cent of DDT on a base of "mixed white inerts with the addition of wetting and suspension agents." It is used as a 1- or 2-per cent suspension in water to give a concentration of 0.05 or 0.10 per cent of DDT. The powder should be wetted with part of the water and allowed to soak for at least 10 minutes before the remainder of the water is added. (Campbell and West 3.)

Gesarol M is a 10-per cent DDT powder which, when mixed with water, forms an emulsion to be used in spraying stables, walls in houses, etc., principally to kill flies. It is to be sold on the Sao Paulo market by the Companhia de Anilinas e Produtos Quimicos Geigy do Brasil, S. A., in 500-gram containers and eventually in 1-, 5-, and 10-kilogram containers. (Dean 6.)

Gesapon is a trade-mark registered in Switzerland and also in the United States (No. 409,820 granted the Geigy Company on October 24, 1944). In England the name is changed to Guesapon. According to information released by the Geigy Company, on May 31, 1944, Gesapon contains

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DDT in a form "assuring penetration of the soil sufficient to reach the pests," e. g., Japanese beetle grubs and certain specific nematodes. Campbell and West (3) state that Gesapon E is an emulsion containing 5 per cent of DDT and the necessary solvent and stabilizing agents. It was originally formulated for soil insects but has many other applications. Guesapon contains 5 per cent of DDT, according to West and Campbell (12).

Gesarex (U. S. trade-mark No. 406,681 granted the Geigy Company on April 18, 1944) is a DDT composition containing compatible fungicides. In England the name Guesarex is used to denote a combined insecticide and fungicide containing 5 per cent of DDT (West and Campbell 12).

#### ROACH REPELLENT CEMENT

(From Page 135)

efficient than brown, red, and green (Tables VII, VIII, and IX). Toxicity studies made against the German Roach yielded negative results.

These data do not prove that Hubbellite flooring will actually prevent roach infestation, for obviously it is possible for roaches to travel around the walls. Nonetheless, I believe these findings do demonstrate that as far as the floor is concerned their numbers can be reduced to the minimum.

In summary, gray-colored Hubbellite shows a marked degree of repellency against the German, American, and Oriental Roaches. Where the Hubbellite half of the test chamber is

Gyron and Ixodex are trade names applied to DDT insecticides in Brazil (Leslie 8).

Neocid (U. S. trade-mark No. 406,071 granted the Geigy Company on March 7, 1944), according to information released on May 31, 1944, is a generic term denoting a series of insecticidal compositions for use against insects affecting man and animals. According to Campbell and West (3), Neocid powder contains 5 per cent of DDT in pyrophyllite and is used essentially for medical applications, e. g., for dusting against lice and bedbugs. Neocid was first tested in Switzerland under the designation "Geigy's preparation No. 1859."

Neocidol is a trade-mark registered in Switzerland. Neocidol is de-

supplied with food and water, repellency is obtained there even in the absence of food, or water, or both on the Portland cement half. Red, brown, and green Hubbellite are equally repellent to German and American Roaches, but less effective against the Oriental species. Hubbellite does not possess properties toxic to the German Roach. These results will be of interest in the consideration of Hubbellite as a flooring, especially for rooms or buildings for food storing, selling, and servicing.

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logic Study of A New Sanigenic Flooring. J. A. M. A., 117: 844-847.

scribed as a reddish, amorphous light powder, and Neocidol-Emulsion as a readily flowing liquid which wets well. Both are effective against lice on horses (Schmid 10, and Schneider 11). Neocidol is a different product from Neocid and is recommended for use on animals, whereas Neocid is used on humans.

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Table IX.—The Repellency Effect of Colored Hubbellities on the Oriental Cockroach, Blatta orientalis

Tėst	Test Chamber Contents	Distribution at 24 hour Intervals													Total Number of	Per Cent Dis- tribu_	
Chamber		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Roaches	
	Hubbellite (Green) - Food - Water Cement - Food - Water	5	0 10	9	1 9	4 6	3 7	2 8	4 6	3 7	3 7	5	4 6	2 8	2 8	47 93	34 66
	Hubbellite (Brown) _ Food - Water Cement - Food _ Water	7	2 8	7 3	4 6	1 9	0 10	5	0 10	1 9	3 7	6	1 9	3 7	4 6	44 96	31 69
	Hubbellite - (Red) - Food - Water Cement - Food - Water	1	1 9	10 0	2 8	2 8	0 10	1 9	2 8	1 9	4 6	8 2	5 5	3 7	1 9	41 99	29 71
	Cement - Food - Water Cement - Food - Water		8 2	8 7	4 6	8 2	8 2	7 3	1 9	6	2 8	6	8 2	7 3	3 7	84 56	60 40
	Hubbellite - Food - Water Hubbellite - Food - Water		7 3	5 5	0	8 2	8 2	1 9	2 8	7 3	1 9	7 3	5	7	6	73 67	52 48

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Chemical Engineer, draft deferred; experienced in the manufacture of sanitary chemicals, toilet preparations. Seek better connection. New York metropolitan area. Address replies to Box No. 929, care of Soap and Sanitary Chemicals.

#### Miscellaneous

Manufacturing Facilities Available—Unlimited capacity for production of liquid hand soap and shampoo—laboratory control — refrigeration—filtration—bottling. Principals only. Address replies to Box No. 931, care of Soap and Sanitary Chemicals.

Philadelphia Janitor & Cleaning Supply Firm established 12 years desires additional nationally advertised lines. We contact industrial and institutional—wholesale and retail accounts. Fidelity Cleaning Supply Co., 1641 No. 12th Street, Philadelphia 22, Pa.

Nailing Machines Wanted: We want used Morgan or Doig wood

#### Miscellaneous

box Nailing Machines at once. State make, size, best cash price. Chas. N. Braun Machinery Co., Fort Wayne 5, Indiana.

Sales Representative—A small sales organization in Chicago, 25 years background in drugs, chemicals, and allied products desires a new account selling raw materials to the above or allied trades. Exchange of references. For further details communicate with Box No. 925, care of Soap and Sanitary Chemicals.

3 Soap Specialists: 1 expert Soap Maker, 1 Chemical Engineer & 1 Salesman wish to join progressive Southern firm on a profit sharing basis. Will build & operate Soap Plant for right party. Have \$30,000 & patents to invest. Contact 3631 N. Morris Blvd., Milwaukee, Wisconsin.

For Sale: Package Machinery Co. Automatic Soap Wrapper; Lehman 3 Roll Water Cooled Soap Mill; H. A. 6 Knife Soap Chipper; Filters; Pumps; Fillers; Labelers; Tanks; Dryers; Mixers; etc. Wanted: Your surplus equipment. Brill Equipment Co., 225 W. 34th St., New York 1, N. Y.

Floor Brushes — We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Will Purchase Immediately—Pneumatic Packaging Machine. used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 935, care Soap & Sanitary Chemicals.

For Sale: Houchin 4" Single Screw Plodder, Motor Driven. 1 Clyde Machine Works 9" Single Screw Plodder; 2—5 Roll water cooled inclined steel-roller mills, 16" dia. x 40" face. Soap Frames; Cutting Tables; Plodders; 12 x 30 and 16 x 40, Three Roll Water Cooled Steel Mills; Stone Mills; Dryers; Chippers; Powder Fillers; Mixers; Grinders; Filter Presses; Disc Filters; Pumps, etc. Send for Soap Bulletin No. 402. We Buy Your Surplus Equipment for Cash. Stein Equipment Corporation, 426 Broome Street, New York City 13.

# OVER THE RANSOM

### by Preston Peaker

PRESENT U. S. production of DDT is at the rate of over thirty million pounds per year, practically all of which is going for use of the armed forces in one form or another. Unless wide insect control projects are developed in post-war period, normal consumption of DDT for regular civilian uses is estimated to be a small fraction of this tonnage.

The State of Oregon's new proposed insecticide law to replace present statute was killed in committee. The old law, calling for full formula disclosure on labels, remains in effect. Several large makers of household insecticides threaten to withdraw from the Oregon market, hinting that they suspect sabotage of the new proposed act by certain agricultural insecticide interests.

Pest control operators cannot obtain sufficient insecticide sprayers for their needs, that is in the one-quart size and larger, all the latter being channeled to agricultural needs. The pest control people threaten a blow-up in Washington if their essential needs are not given consideration as well as the victory garden market.

Two days after the initial assault on Iwo Jima in the Pacific, the island was sprayed with a DDT solution by airplane. In spite of the thousands of American dead and Japanese corpses on the island, the fly problem which was so great in former Pacific amphibious operations, was practically nil.

Although glycerine production is at a high level, stocks are reported now to be declining. The only answer appears to be that consumption is at peak levels.

New insect repellent program for Army calls for 25,000,000 pounds of benzyl benzoate a year, which is a lot of benzyl benzoate! Whether the toluol to produce this

will be available remains to be seen. Practically all insect repellent going to Army now is in gallon cans, little or none now being packed in two-ounce bottles.

The lions sat down with the lambs at dinner in Washington on March 28! About forty persons, members of the Insecticide and Disinfectant Manufacturers Advisory Committee, representatives of WPB and OPA in insecticide and disinfectant categories, and a few representatives of the U.S. Department of Agriculture were present at an informal dinner at the Statler Hotel on that date. Dr. C. C. McDonnell, former chief of Insecticide Act enforcement for the Department of Agriculture, recently retired, and who had just left the hospital following a tonsilectomy, was the impromptu guest of honor.

British sources speak of a new insecticide material claimed to be particularly effective against locusts, crickets, body lice, the bedbug, bettles, weevils, larvae, ants and wasps. Called "Gammexane," it is produced by Imperial Chemical Industries. The new insecticide is described chemically as benzene hexachloride.

The WFA requested bids (which were to have been submitted not later than April 4) on 24,000,000 lbs. of soap divided approximately equally between toilet and laundry soap. Delivery of 2,000,000 lbs. of toilet soap and the same amount of laundry soap were desired in April, with the balance in approximately equal installments during the three succeeding months.

Paradichlorbenzene is banned for use in moth products, deodorant blocks or crystals, and other insecticide uses except of an agricultural nature, according to an amendment to Order M-340, issued by WPB on March 26. Paradichlorbenzene as an agricultural insecticide in the past has been confined

almost wholly to use against the peach borer. The peach borer consumption, however, has comprised a very small percentage of the total. The great proportion of consumption in the past has been in moth cakes, crystals and sprays and in deodorizing blocks, cakes and crystals.

Guesses are that the fat and oil quota for civilian soap manufacture will remain at 80 per cent of 1940-41 throughout the balance of 1945. Rosin shortage is posing the real serious problem for soapers today. In 1943, they used rosin in place of short fats. Today the rosin is not available.

The new Navy film on DDT, how to mix it up and how to use it, as produced under the direction of the Navy Bureau of Medicine and Surgery, was given an initial showing at a DDT Advisory Committee meeting late in March in Washington and is now ready for general educational use by the Navy.

Copra promises to be the first export which will reach the United States from the Philippines. This, at least, is the report received by the WALL STREET JOURNAL from a Manila source. Coconut plantations were largely untouched by the occupation, this observer indicates, although all processing plants were reported destroyed.

A reduced supply of steel drums and pails for industrial users over the next few months is predicted in a recent WPB press release. A renewed critical shortage of sheet steel has resulted in a reduced allotment for steel container manufacture. All packers and shippers using steel containers are asked to do their utmost in the direction of salvage and re-use.

Dexter Lewis has resigned as chief of the Naval Stores Unit, Chemicals Bureau of WPB, effective April 1. His work is being taken over by John P. Duane who is being designated as chief of the Natural Resins and Naval Stores Section.

Help Wanted: To work in and learn to run PEET-GRADY Test Laboratory. Contact Mr. R. W. Busch, Dodge & Olcott Co. 180 Varick Street, New York City.

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"After yo' all tells him to prove dat de dice wuz loaded, — what happened den?"

# Prove it!

NCE again to quote a well-known advertising agency space buyer: "An advertiser can cover an entire field in one stroke at low cost through the right business papers."

This is undoubtedly true as far as it goes, but the advertiser must know also which are "the right business papers," — those which because of ABC circulation analysis, editorial content, and reader interest as shown by high subscription renewal rate PROVE that they are the right ones.

In the field of soap products, detergents, insecticides, disinfectants, and allied chemical specialties, for example, there is one publication which PROVES that it is the "right paper," and that is

# SOAP and Sanitary Chemicals 254 WEST 31st STREET NEW YORK 1

A.B.C. paid subscription renewal rate for 1944-86%.

#### Tale Ends

R. ANDREA POLLITZER, descendant of the old Trieste soap making family who fled from that city when it was occupied by the Germans in September, 1943, reports in a recent letter that he plans to build a new factory and resume soap manufacture at the first chance. He fears that his old plant in Trieste has been stripped by the Germans. Dr. Pollitzer is now associated with the Allied Control Commission in Rome as an oil and fat expert.

To state that agricultural insecticide manufacturers do not like the pattern of the WFA fertilizer plan, fearing that the same idea may be applied to insecticides for farmers, is to put it mildly. This is about as close to socialization of industry as we have come yet. The whole idea deserves even stronger opposition than it has yet engendered!

All sorts of steel drums and barrels are becoming tighter and tighter, both new and used. A cut by WPB for the third quarter would not be a surprise.

With pine oil and rosin buyers regularly grumbling threats into their bea'rds and with WPB holding the allocation reins, rumor has it that solely as a defense measure Al Forster, head of the Hercules Powder naval stores division, Paul Mayfield, its assistant head, and Fred Hogg, manager of sales, have hired a nice dark cellar in downtown Wilmington as a hideout all equipped with trap doors, peep-holes, and sawed-off shotguns.

Members of the Insecticide and Disinfectant Advisory Committee along with some officials of WPB, OPA, the Army and the Department of Agriculture, about forty all told, sat down recently to dinner together in Washington. Nobody was injured!

